Mathematica 11.3 Integration Test Results

Test results for the 159 problems in "1.1.1.4 (a+b x)^m (c+d x)^n (e+f x)^p (g+h x)^q.m"

Problem 33: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{A + B x}{\sqrt{a + b x} \sqrt{c + \frac{b (-1+c) x}{a}} \sqrt{e + \frac{b (-1+e) x}{a}}} \, dx$$

Optimal (type 4, 145 leaves, 3 steps):

$$-\frac{2 a^{3/2} B \,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{1-c} \sqrt{a+b x}}{\sqrt{a}}\right], \frac{1-e}{1-c}\right]}{b^2 \sqrt{1-c} \,(1-e)} + \frac{2 \sqrt{a} \,(a B e + A (b - b e)) \,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{1-c} \sqrt{a+b x}}{\sqrt{a}}\right], \frac{1-e}{1-c}\right]}{b^2 \sqrt{1-c} \,(1-e)}$$

Result (type 4, 309 leaves):

$$-\left(\left(2\sqrt{\frac{a}{-1+c}}\,(a+b\,x)^{3/2}\left(-B\sqrt{\frac{a}{-1+c}}\left(-1+c+\frac{a}{a+b\,x}\right)\left(-1+e+\frac{a}{a+b\,x}\right)-\frac{1}{\sqrt{a+b\,x}}\,\mathrm{i}\,a\,B\,(-1+e)\sqrt{\frac{-1+c+\frac{a}{a+b\,x}}{-1+c}}\sqrt{\frac{-1+e+\frac{a}{a+b\,x}}{-1+e}}\,\mathrm{EllipticE}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{-1+c}}}{\sqrt{a+b\,x}}\right],\frac{-1+c}{-1+e}\right]+\frac{1}{\sqrt{a+b\,x}}\,\mathrm{i}\,(a\,B\,c+A\,(b-b\,c))\,(-1+e)\sqrt{\frac{-1+c+\frac{a}{a+b\,x}}{-1+c}}\sqrt{\frac{-1+e+\frac{a}{a+b\,x}}{-1+e}}\,\mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{\frac{a}{-1+c}}}{\sqrt{a+b\,x}}\right],\frac{-1+c}{-1+e}\right]\right)\right)\Bigg/\left(a\,b^2\,(-1+e)\sqrt{c+\frac{b\,(-1+c)\,x}{a}}\sqrt{e+\frac{b\,(-1+e)\,x}{a}}\right)\right)$$

Problem 34: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{A+B\,x}{\sqrt{a+b\,x}\,\sqrt{c+d\,x}\,\sqrt{e+\frac{b\,(-1+e)\,x}{a}}}\,dx$$

Optimal (type 4, 221 leaves, 5 steps):

$$-\left(\left(2\,a\,B\sqrt{-b\,c+a\,d}\sqrt{\frac{b\,(c+d\,x)}{b\,c-a\,d}}\,\mathrm{EllipticE}\left[\mathrm{ArcSin}\left[\frac{\sqrt{d}\,\sqrt{a+b\,x}}{\sqrt{-b\,c+a\,d}}\right],-\frac{(b\,c-a\,d)\,(1-e)}{a\,d}\right]\right)\Bigg/\left(b^2\sqrt{d}\,(1-e)\sqrt{c+d\,x}\right)\right)+\left(2\sqrt{a}\,(a\,B\,e+A\,(b-b\,e))\sqrt{\frac{b\,(c+d\,x)}{b\,c-a\,d}}\,\mathrm{EllipticF}\left[\mathrm{ArcSin}\left[\frac{\sqrt{1-e}\,\sqrt{a+b\,x}}{\sqrt{a}}\right],-\frac{a\,d}{(b\,c-a\,d)\,(1-e)}\right]\right)\Bigg/\left(b^2\,(1-e)^{3/2}\sqrt{c+d\,x}\right)$$

Result (type 4, 312 leaves):

$$-\left(\left(2\sqrt{\frac{a}{-1+e}}\,(a+b\,x)^{3/2}\left(-\frac{b\,B\,\sqrt{\frac{a}{-1+e}}\,(c+d\,x)\,(a\,e+b\,(-1+e)\,x)}{(a+b\,x)^{2}}-\frac{1}{\sqrt{a+b\,x}}\,i\,a\,B\,d\,\sqrt{\frac{b\,(c+d\,x)}{d\,(a+b\,x)}}\,\sqrt{\frac{-1+e+\frac{a}{a+b\,x}}{-1+e}}\,\text{EllipticE}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{-1+e}}}{\sqrt{a+b\,x}}\right],\frac{(b\,c-a\,d)\,(-1+e)}{a\,d}\right]+\frac{1}{\sqrt{a+b\,x}}\,i\,d\,(a\,B\,e+A\,(b-b\,e))\,\sqrt{\frac{b\,(c+d\,x)}{d\,(a+b\,x)}}\,\sqrt{\frac{-1+e+\frac{a}{a+b\,x}}{-1+e}}\,\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{\frac{a}{-1+e}}}{\sqrt{a+b\,x}}\right],\frac{(b\,c-a\,d)\,(-1+e)}{a\,d}\right]\right)\right)\Big/\left(a\,b^{2}\,d\,\sqrt{c+d\,x}\,\sqrt{e+\frac{b\,(-1+e)\,x}{a}}\right)\right)$$

Problem 43: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{c+d\,x}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}}{a+b\,x}\,dx$$

Optimal (type 4, 570 leaves, 12 steps):

$$\frac{2\sqrt{c+d x}\,\sqrt{e+f x}\,\sqrt{g+h x}}{3 b}-\left(2\sqrt{-d e+c f}\,\left(3 a d f h-b\,(d f g+d e h+c f h)\right)\sqrt{\frac{d\,(e+f x)}{d e-c f}}\,\sqrt{g+h x}\right.$$
$$\left.\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d x}}{\sqrt{-d e+c f}}\right],\frac{(d e-c f)\,h}{f\,(d g-c h)}\right]\right)\Big/\left(3 b^2 d\sqrt{f}\,h\sqrt{e+f x}\,\sqrt{\frac{d\,(g+h x)}{d g-c h}}\right)+$$
$$\left(2\sqrt{-d e+c f}\,\left(3 a^2 d f h^2-3 a b\,(d e+c f)\,h^2-b^2\,(d g\,(f g-e h)-c h\,(f g+2 e h))\right)\right.$$
$$\left.\sqrt{\frac{d\,(e+f x)}{d e-c f}}\,\sqrt{\frac{d\,(g+h x)}{d g-c h}}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d x}}{\sqrt{-d e+c f}}\right],\frac{(d e-c f)\,h}{f\,(d g-c h)}\right]\right)\Big/$$
$$\left(3 b^3 d\sqrt{f}\,h\sqrt{e+f x}\,\sqrt{g+h x}\right)-$$
$$\left(2\,(b e-a f)\,\sqrt{-d e+c f}\,(b g-a h)\,\sqrt{\frac{d\,(e+f x)}{d e-c f}}\,\sqrt{\frac{d\,(g+h x)}{d g-c h}}\,\text{EllipticPi}\left[\right.\right.$$
$$\left.\left.-\frac{b\,(d e-c f)}{(b c-a d)\,f},\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d x}}{\sqrt{-d e+c f}}\right],\frac{(d e-c f)\,h}{f\,(d g-c h)}\right]\right)\Big/\left(b^3\sqrt{f}\,\sqrt{e+f x}\,\sqrt{g+h x}\right)$$

Result (type 4, 29 892 leaves) : Display of huge result suppressed!

Problem 54: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{2-3 x}}{\sqrt{-5+2 x}\,\sqrt{1+4 x}}\,dx$$

Optimal (type 4, 47 leaves, 2 steps) :

$$\frac{\sqrt{\frac{11}{2}}\,\sqrt{5-2 x}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{1+4 x}}{\sqrt{11}}\right],3\right]}{2\sqrt{-5+2 x}}$$

Result (type 4, 111 leaves) :

$$-\left(\left(\frac{2\,(-5+2\,x)\,(-2+3\,x)}{\sqrt{\frac{1}{2}+2\,x}}+\sqrt{11}\,\sqrt{\frac{-5+2\,x}{1+4\,x}}\,\sqrt{\frac{-2+3\,x}{1+4\,x}}\,(1+4\,x)\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{11}{3}}}{\sqrt{1+4\,x}}\right],3\right]\right)\Big/\left(2\,\sqrt{2-3\,x}\,\sqrt{-10+4\,x}\right)\right)$$

Problem 58: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{\sqrt{c+d\,x}}{(a+b\,x)\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}}\,dx$$

Optimal (type 4, 293 leaves, 8 steps):

$$\left(2\,\sqrt{-d\,e+c\,f}\,\sqrt{\frac{d\,(e+f\,x)}{d\,e-c\,f}}\,\sqrt{\frac{d\,(g+h\,x)}{d\,g-c\,h}}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d\,x}}{\sqrt{-d\,e+c\,f}}\right],\frac{(d\,e-c\,f)\,h}{f\,(d\,g-c\,h)}\right]\right)\Big/\left(b\,\sqrt{f}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}\right)-\left(2\,\sqrt{-d\,e+c\,f}\,\sqrt{\frac{d\,(e+f\,x)}{d\,e-c\,f}}\,\sqrt{\frac{d\,(g+h\,x)}{d\,g-c\,h}}\,\text{EllipticPi}\left[-\frac{b\,(d\,e-c\,f)}{(b\,c-a\,d)\,f},\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d\,x}}{\sqrt{-d\,e+c\,f}}\right],\frac{(d\,e-c\,f)\,h}{f\,(d\,g-c\,h)}\right]\right)\Big/\left(b\,\sqrt{f}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}\right)$$

Result (type 4, 202 leaves):

$$-\left(\left(2\,i\,\sqrt{c+d\,x}\,\sqrt{\frac{d\,(g+h\,x)}{d\,g-c\,h}}\left(\text{EllipticF}\left[i\,\text{ArcSinh}\left[\sqrt{\frac{f\,(c+d\,x)}{d\,e-c\,f}}\right],\frac{d\,e\,h-c\,f\,h}{d\,f\,g-c\,f\,h}\right]-\text{EllipticPi}\left[\frac{b\,(-d\,e+c\,f)}{(b\,c-a\,d)\,f},i\,\text{ArcSinh}\left[\sqrt{\frac{f\,(c+d\,x)}{d\,e-c\,f}}\right],\frac{d\,e\,h-c\,f\,h}{d\,f\,g-c\,f\,h}\right]\right)\right)\Big/\left(b\,\sqrt{\frac{f\,(c+d\,x)}{d\,(e+f\,x)}}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}\right)\right)$$

Problem 59: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(c+d\,x)^{3/2}}{(a+b\,x)\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}}\,dx$$

Optimal (type 4, 449 leaves, 11 steps):

$$\left(2\,d\,\sqrt{-f\,g+e\,h}\,\sqrt{c+d\,x}\,\sqrt{\frac{f\,(g+h\,x)}{f\,g-e\,h}}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{h}\,\sqrt{e+f\,x}}{\sqrt{-f\,g+e\,h}}\right],-\frac{d\,(f\,g-e\,h)}{(d\,e-c\,f)\,h}\right]\right)\Big/\left(b\,f\,\sqrt{h}\,\sqrt{-\frac{f\,(c+d\,x)}{d\,e-c\,f}}\,\sqrt{g+h\,x}\right)+\left(2\,(b\,c-a\,d)\,\sqrt{-d\,e+c\,f}\,\sqrt{\frac{d\,(e+f\,x)}{d\,e-c\,f}}\,\sqrt{\frac{d\,(g+h\,x)}{d\,g-c\,h}}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d\,x}}{\sqrt{-d\,e+c\,f}}\right],\frac{(d\,e-c\,f)\,h}{f\,(d\,g-c\,h)}\right]\right)\Big/\left(b^2\,\sqrt{f}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}\right)-\left(2\,(b\,c-a\,d)\,\sqrt{-d\,e+c\,f}\,\sqrt{\frac{d\,(e+f\,x)}{d\,e-c\,f}}\,\sqrt{\frac{d\,(g+h\,x)}{d\,g-c\,h}}\,\text{EllipticPi}\left[-\frac{b\,(d\,e-c\,f)}{(b\,c-a\,d)\,f},\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d\,x}}{\sqrt{-d\,e+c\,f}}\right],\frac{(d\,e-c\,f)\,h}{f\,(d\,g-c\,h)}\right]\right)\Big/\left(b^2\,\sqrt{f}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}\right)$$

Result (type 4, 381 leaves):

$$-\frac{1}{b^2 f h \sqrt{g+h x}}2 \sqrt{c+d x} \left(-\frac{b d f (g+h x)}{\sqrt{e+f x}}+\left(\mathrm{i} \sqrt{\frac{f (g+h x)}{h (e+f x)}} \left(-b d^2 (b e-a f) (-f g+e h) \text{EllipticE}\left[\mathrm{i} \text{ArcSinh}\left[\frac{\sqrt{-e+\frac{f g}{h}}}{\sqrt{e+f x}}\right], \frac{(d e-c f) h}{d (-f g+e h)}\right]+f \left(-b \left(a d^2 (-f g+e h)+b \left(d^2 e g-2 c d e h+c^2 f h\right)\right) \text{EllipticF}\left[\mathrm{i} \text{ArcSinh}\left[\frac{\sqrt{-e+\frac{f g}{h}}}{\sqrt{e+f x}}\right], \frac{(d e-c f) h}{d (-f g+e h)}\right]+(b c-a d)^2 f h \text{EllipticPi}\left[\frac{(b e-a f) h}{b (-f g+e h)}, \mathrm{i} \text{ArcSinh}\left[\frac{\sqrt{-e+\frac{f g}{h}}}{\sqrt{e+f x}}\right], \frac{(d e-c f) h}{d (-f g+e h)}\right]\right)\right)\right) \bigg/ \left(d (-b e+a f) \sqrt{-e+\frac{f g}{h}} \sqrt{\frac{f (c+d x)}{d (e+f x)}}\right)\right)$$

Problem 68: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{c i+d i x}{\sqrt{c+d x} \sqrt{e+f x} \sqrt{g+h x}} \, dx$$

Optimal (type 4, 137 leaves, 3 steps):

$$\left(2 \sqrt{-f g+e h}\, i \sqrt{c+d x} \sqrt{\frac{f (g+h x)}{f g-e h}} \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{h} \sqrt{e+f x}}{\sqrt{-f g+e h}}\right], -\frac{d (f g-e h)}{(d e-c f) h}\right]\right) \bigg/ \left(f \sqrt{h} \sqrt{-\frac{f (c+d x)}{d e-c f}} \sqrt{g+h x}\right)$$

Result (type 4, 180 leaves):

$$-\left(\left(2\,\mathrm{i}\,\mathrm{i}\sqrt{c+d x}\,\sqrt{g+h x}\left(\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{f\,(c+d x)}{d e-c f}}\right],\frac{d e h-c f h}{d f g-c f h}\right]-\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\sqrt{\frac{f\,(c+d x)}{d e-c f}}\right],\frac{d e h-c f h}{d f g-c f h}\right]\right)\right)\Big/\left(h\sqrt{\frac{f\,(c+d x)}{d\,(e+f x)}}\,\sqrt{e+f x}\,\sqrt{\frac{d\,(g+h x)}{d g-c h}}\right)\right)$$

Problem 69: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{a+b x}{\sqrt{c+d x}\,\sqrt{e+f x}\,\sqrt{g+h x}}\,dx$$

Optimal (type 4, 284 leaves, 6 steps):

$$\left(2 b\sqrt{-d e+c f}\,\sqrt{\frac{d\,(e+f x)}{d e-c f}}\,\sqrt{g+h x}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d x}}{\sqrt{-d e+c f}}\right],\frac{(d e-c f)\,h}{f\,(d g-c h)}\right]\right)\Big/\left(d\sqrt{f}\,h\sqrt{e+f x}\,\sqrt{\frac{d\,(g+h x)}{d g-c h}}\right)-\left(2\sqrt{-d e+c f}\,(b g-a h)\sqrt{\frac{d\,(e+f x)}{d e-c f}}\,\sqrt{\frac{d\,(g+h x)}{d g-c h}}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{f}\,\sqrt{c+d x}}{\sqrt{-d e+c f}}\right],\frac{(d e-c f)\,h}{f\,(d g-c h)}\right]\right)\Big/\left(d\sqrt{f}\,h\sqrt{e+f x}\,\sqrt{g+h x}\right)$$

Result (type 4, 319 leaves):

$$-\left(\left(2\left(-b d^2\sqrt{-c+\frac{d e}{f}}\,(e+f x)\,(g+h x)-\mathrm{i}\,b\,(d e-c f)\,h\,(c+d x)^{3/2}\sqrt{\frac{d\,(e+f x)}{f\,(c+d x)}}\,\sqrt{\frac{d\,(g+h x)}{h\,(c+d x)}}\,\text{EllipticE}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d e}{f}}}{\sqrt{c+d x}}\right],\frac{d f g-c f h}{d e h-c f h}\right]+\mathrm{i}\,d\,(b e-a f)\,h\,(c+d x)^{3/2}\sqrt{\frac{d\,(e+f x)}{f\,(c+d x)}}\,\sqrt{\frac{d\,(g+h x)}{h\,(c+d x)}}\,\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d e}{f}}}{\sqrt{c+d x}}\right],\frac{d f g-c f h}{d e h-c f h}\right]\right)\right)\Big/\left(d^2\sqrt{-c+\frac{d e}{f}}\,f h\sqrt{c+d x}\,\sqrt{e+f x}\,\sqrt{g+h x}\right)\right)$$

Problem 70: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a+b x) \sqrt{c+d x} \sqrt{e+f x} \sqrt{g+h x}} \, dx$$

Optimal (type 4, 165 leaves, 4 steps):

$$-\left(\left(2 \sqrt{-d e+c f} \sqrt{\frac{d (e+f x)}{d e-c f}} \sqrt{\frac{d (g+h x)}{d g-c h}} \text{EllipticPi}\left[-\frac{b (d e-c f)}{(b c-a d) f}, \text{ArcSin}\left[\frac{\sqrt{f} \sqrt{c+d x}}{\sqrt{-d e+c f}}\right], \frac{(d e-c f) h}{f (d g-c h)}\right]\right) \Big/ \left((b c-a d) \sqrt{f} \sqrt{e+f x} \sqrt{g+h x}\right)\right)$$

Result (type 4, 225 leaves):

$$\left(2 i (c+d x) \sqrt{\frac{d (e+f x)}{f (c+d x)}} \sqrt{\frac{d (g+h x)}{h (c+d x)}} \left(\text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d e}{f}}}{\sqrt{c+d x}}\right], \frac{d f g-c f h}{d e h-c f h}\right] - \text{EllipticPi}\left[\frac{(b c-a d) f}{b (-d e+c f)}, i \text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d e}{f}}}{\sqrt{c+d x}}\right], \frac{d f g-c f h}{d e h-c f h}\right]\right)\right) \Big/ \left((-b c+a d) \sqrt{-c+\frac{d e}{f}} \sqrt{e+f x} \sqrt{g+h x}\right)$$

Problem 71: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{1}{(a+b x) (c+d x)^{3/2} \sqrt{e+f x} \sqrt{g+h x}} \, dx$$

Optimal (type 4, 393 leaves, 10 steps):

$$\frac{2 d^2 \sqrt{e+f x} \sqrt{g+h x}}{(b c-a d) (d e-c f) (d g-c h) \sqrt{c+d x}} -$$

$$\left(2 d \sqrt{h} \sqrt{-f g+e h} \sqrt{c+d x} \sqrt{\frac{f (g+h x)}{f g-e h}} \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{h} \sqrt{e+f x}}{\sqrt{-f g+e h}}\right], -\frac{d (f g-e h)}{(d e-c f) h}\right]\right) \Big/$$

$$\left((b c-a d) (d e-c f) (d g-c h) \sqrt{-\frac{f (c+d x)}{d e-c f}} \sqrt{g+h x}\right) -$$

$$\left(2 b \sqrt{-d e+c f} \sqrt{\frac{d (e+f x)}{d e-c f}} \sqrt{\frac{d (g+h x)}{d g-c h}} \text{EllipticPi}\left[-\frac{b (d e-c f)}{(b c-a d) f},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{f} \sqrt{c+d x}}{\sqrt{-d e+c f}}\right], \frac{(d e-c f) h}{f (d g-c h)}\right]\right) \Big/ \left((b c-a d)^2 \sqrt{f} \sqrt{e+f x} \sqrt{g+h x}\right)$$

Result (type 4, 321 leaves) :

$$\left(2 i (c+d x) \sqrt{\frac{d (e+f x)}{f (c+d x)}} \sqrt{\frac{d (g+h x)}{h (c+d x)}}\right.$$

$$\left((b c-a d) f \text{EllipticE}\left[i \text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d g}{h}}}{\sqrt{c+d x}}\right], \frac{d e h-c f h}{d f g-c f h}\right] +\right.$$

$$(b d e-2 b c f+a d f) \text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d g}{h}}}{\sqrt{c+d x}}\right], \frac{d e h-c f h}{d f g-c f h}\right] +$$

$$\left.\left. b (-d e+c f) \text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, i \text{ArcSinh}\left[\frac{\sqrt{-c+\frac{d g}{h}}}{\sqrt{c+d x}}\right], \frac{d e h-c f h}{d f g-c f h}\right]\right)\right) \Big/$$

$$\left((b c-a d)^2 (-d e+c f) \sqrt{-c+\frac{d g}{h}} \sqrt{e+f x} \sqrt{g+h x}\right)$$

Problem 72: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b x)\ (c+d x)^{5/2}\ \sqrt{e+f x}\ \sqrt{g+h x}}\,dx$$

Optimal (type 4, 875 leaves, 18 steps) :

$$\frac{2 d^2 \sqrt{e+f x} \sqrt{g+h x}}{3 (b c-a d) (d e-c f) (d g-c h) (c+d x)^{3/2}}+$$

$$\frac{2 b d^2 \sqrt{e+f x} \sqrt{g+h x}}{(b c-a d)^2 (d e-c f) (d g-c h) \sqrt{c+d x}}-\frac{4 d^2 (d f g+d e h-2 c f h) \sqrt{e+f x} \sqrt{g+h x}}{3 (b c-a d) (d e-c f)^2 (d g-c h)^2 \sqrt{c+d x}}+$$

$$\left(4 d \sqrt{f} (d f g+d e h-2 c f h) \sqrt{\frac{d (e+f x)}{d e-c f}} \sqrt{g+h x}\right.$$

$$\left.\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{f} \sqrt{c+d x}}{\sqrt{-d e+c f}}\right], \frac{(d e-c f) h}{f (d g-c h)}\right]\right) \Big/$$

$$\left(3 (b c-a d) (-d e+c f)^{3/2} (d g-c h)^2 \sqrt{e+f x} \sqrt{\frac{d (g+h x)}{d g-c h}}\right)-\left(2 b d \sqrt{h} \sqrt{-f g+e h}\right.$$

$$\left.\sqrt{c+d x} \sqrt{\frac{f (g+h x)}{f g-e h}} \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{h} \sqrt{e+f x}}{\sqrt{-f g+e h}}\right], -\frac{d (f g-e h)}{(d e-c f) h}\right]\right) \Big/$$

$$\left((b c-a d)^2 (d e-c f) (d g-c h) \sqrt{-\frac{f (c+d x)}{d e-c f}} \sqrt{g+h x}\right)-$$

$$\left(2 \sqrt{f} (2 d f g+d e h-3 c f h) \sqrt{\frac{d (e+f x)}{d e-c f}} \sqrt{\frac{d (g+h x)}{d g-c h}}\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{f} \sqrt{c+d x}}{\sqrt{-d e+c f}}\right], \frac{(d e-c f) h}{f (d g-c h)}\right]\right) \Big/$$

$$\left(3 (b c-a d) (-d e+c f)^{3/2} (d g-c h) \sqrt{e+f x} \sqrt{g+h x}\right)-$$

$$\left(2 b^2 \sqrt{-d e+c f} \sqrt{\frac{d (e+f x)}{d e-c f}} \sqrt{\frac{d (g+h x)}{d g-c h}} \text{EllipticPi}\left[-\frac{b (d e-c f)}{(b c-a d) f},\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{f} \sqrt{c+d x}}{\sqrt{-d e+c f}}\right], \frac{(d e-c f) h}{f (d g-c h)}\right]\right) \Big/ \left((b c-a d)^3 \sqrt{f} \sqrt{e+f x} \sqrt{g+h x}\right)$$

Result (type 4, 12 191 leaves) :

$$\sqrt{c+d x} \sqrt{e+f x} \sqrt{g+h x} \left(\frac{2 d^2}{3 (b c-a d) (-d e+c f) (-d g+c h) (c+d x)^2}+\right.$$

$$\left(2 d^2 \left(3 b d^2 e g-5 b c d f g+2 a d^2 f g-5 b c d e h+2 a d^2 e h+7 b c^2 f h-4 a c d f h\right)\right) \Big/$$

$$\left.\left(3\left(b c-a d\right)^{2}\left(-d e+c f\right)^{2}\left(-d g+c h\right)^{2}\left(c+d x\right)\right)\right)+\frac{1}{3\left(-b c+a d\right)^{2}\left(-d e+c f\right)^{2}\left(-d g+c h\right)^{2}}$$

$$2\left(\left(\left(-3 b d^{2} e g+5 b c d f g-2 a d^{2} f g+5 b c d e h-2 a d^{2} e h-7 b c^{2} f h+4 a c d f h\right)\right.\right.$$

$$\left.\left(c+d x\right)^{3/2}\left(f+\frac{d e}{c+d x}-\frac{c f}{c+d x}\right)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)\right)\Big/$$

$$\left(\sqrt{e+\frac{\left(c+d x\right)\left(f-\frac{c f}{c+d x}\right)}{d}}\sqrt{g+\frac{\left(c+d x\right)\left(h-\frac{c h}{c+d x}\right)}{d}}\right)+$$

$$\left(\left(c+d x\right)\left(-b+\frac{b c}{c+d x}-\frac{a d}{c+d x}\right)\sqrt{f+\frac{d e}{c+d x}-\frac{c f}{c+d x}}\sqrt{h+\frac{d g}{c+d x}-\frac{c h}{c+d x}}\right.$$

$$\sqrt{\left(f h+\frac{d^{2} e g}{\left(c+d x\right)^{2}}-\frac{c d f g}{\left(c+d x\right)^{2}}-\frac{c d e h}{\left(c+d x\right)^{2}}+\frac{c^{2} f h}{\left(c+d x\right)^{2}}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)}$$

$$\left(\left(\left(b c-a d\right)\left(-d e+c f\right) h\left(-b d^{2} f g^{2}+b d^{2} e g h+a d^{2} f g h-3 b c d e h^{2}+2 a d^{2} e h^{2}+3 b c^{2}\right.\right.\right.$$

$$\left.\left.f h^{2}-3 a c d f h^{2}\right)\right)\Big/\left(d\left(b g-a h\right)\sqrt{f+\frac{d e}{c+d x}-\frac{c f}{c+d x}}\sqrt{h+\frac{d g}{c+d x}-\frac{c h}{c+d x}}\right)+$$

$$\frac{3 b d^{3} e^{2} g\sqrt{h+\frac{d g}{c+d x}-\frac{c h}{c+d x}}}{\sqrt{f+\frac{d e}{c+d x}-\frac{c f}{c+d x}}}-\frac{8 b c d^{2} e f g\sqrt{h+\frac{d g}{c+d x}-\frac{c h}{c+d x}}}{\sqrt{f+\frac{d e}{c+d x}-\frac{c f}{c+d x}}}+$$

$$\frac{2 a d^{3} e f g\sqrt{h+\frac{d g}{c+d x}-\frac{c h}{c+d x}}}{\sqrt{f+\frac{d e}{c+d x}-\frac{c f}{c+d x}}}+\frac{5 b c^{2} d f^{2} g\sqrt{h+\frac{d g}{c+d x}-\frac{c h}{c+d x}}}{\sqrt{f+\frac{d e}{c+d x}-\frac{c f}{c+d x}}}-$$

$$\frac{2\,a\,c\,d^2\,f^2\,g\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}-\frac{5\,b\,c\,d^2\,e^2\,h\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}+$$

$$\frac{2\,a\,d^3\,e^2\,h\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}+\frac{12\,b\,c^2\,d\,e\,f\,h\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}-$$

$$\frac{6\,a\,c\,d^2\,e\,f\,h\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}-\frac{7\,b\,c^3\,f^2\,h\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}+$$

$$\left.\frac{4\,a\,c^2\,d\,f^2\,h\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}-\frac{3\,b^3\,(d\,e-c\,f)^2\,(d\,g-c\,h)^2\,\sqrt{h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}}}{d\,(b\,g-a\,h)\,\left(b-\frac{b\,c}{c+d\,x}+\frac{a\,d}{c+d\,x}\right)\sqrt{f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}}}\right)$$

$$\left(\left(3\,i\,b\,d^2\,e\,f\,g\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\,\left(\text{EllipticE}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\right.\right.\right.\right.$$

$$\left.\left.\left.\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]-\text{EllipticF}\left[i\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\right)\Bigg/$$

$$\left((b\,c-a\,d)\,(-d\,e+c\,f)\,\sqrt{-\frac{-d\,g+c\,h}{h}}\,\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\right.}\right.$$

$$\left.\left.\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)\right)-\left(5\,i\,b\,c\,d\,f^2\,g\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\right.$$

$$\Bigg(\text{EllipticE}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big],\ \frac{(-d e+c f)\,h}{f\,(-d g+c h)}\Big]-\text{EllipticF}\Big[$$

$$i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big],\ \frac{(-d e+c f)\,h}{f\,(-d g+c h)}\Big]\Bigg)\Bigg)\Bigg/\Bigg((b c-a d)\ (-d e+c f)$$

$$\sqrt{-\frac{-d g+c h}{h}}\ \sqrt{\Big(f h+\frac{d^2 e g-c d f g-c d e h+c^2 f h}{(c+d x)^2}+\frac{d f g+d e h-2 c f h}{c+d x}\Big)}\Bigg)+$$

$$\Bigg(2\,i\,a\,d^2 f^2 g\,\sqrt{1-\frac{-d e+c f}{f\,(c+d x)}}\ \sqrt{1-\frac{-d g+c h}{h\,(c+d x)}}\ \Bigg(\text{EllipticE}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big],$$

$$\frac{(-d e+c f)\,h}{f\,(-d g+c h)}\Big]-\text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big],\ \frac{(-d e+c f)\,h}{f\,(-d g+c h)}\Big]\Bigg)\Bigg)\Bigg/$$

$$\Bigg((b c-a d)\ (-d e+c f)\ \sqrt{-\frac{-d g+c h}{h}}\ \sqrt{\Big(f h+\frac{d^2 e g-c d f g-c d e h+c^2 f h}{(c+d x)^2}+}$$

$$\frac{d f g+d e h-2 c f h}{c+d x}\Big)\Bigg)-\Bigg(5\,i\,b\,c\,d\,e\,f\,h\,\sqrt{1-\frac{-d e+c f}{f\,(c+d x)}}\ \sqrt{1-\frac{-d g+c h}{h\,(c+d x)}}$$

$$\Bigg(\text{EllipticE}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big],\ \frac{(-d e+c f)\,h}{f\,(-d g+c h)}\Big]-\text{EllipticF}\Big[$$

$$i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big],\ \frac{(-d e+c f)\,h}{f\,(-d g+c h)}\Big]\Bigg)\Bigg)\Bigg/\Bigg((b c-a d)\ (-d e+c f)$$

$$\sqrt{-\frac{-d\,g+c\,h}{h}}\;\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\;\Bigg)+$$

$$\Bigg(2\,\mathrm{i}\,a\,d^2\,e\,f\,h\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\;\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\;\Bigg(\text{EllipticE}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],$$

$$\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]-\text{EllipticF}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\Bigg((b\,c-a\,d)\,(-d\,e+c\,f)\,\sqrt{-\frac{-d\,g+c\,h}{h}}\;\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\right.}$$

$$\left.\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)\Bigg)+\Bigg(7\,\mathrm{i}\,b\,c^2\,f^2\,h\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\;\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}$$

$$\Bigg(\text{EllipticE}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]-\text{EllipticF}\Big[$$

$$\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]\Bigg)\Bigg)\Big/\Bigg((b\,c-a\,d)\,(-d\,e+c\,f)$$

$$\sqrt{-\frac{-d\,g+c\,h}{h}}\;\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\;\Bigg)-$$

$$\Bigg(4\,\mathrm{i}\,a\,c\,d\,f^2\,h\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\;\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\;\Bigg(\text{EllipticE}\Big[\mathrm{i}\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],$$

$$\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big] - \text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]\Big)\Big)\Big/$$

$$\Big((b\,c-a\,d)\,(-d\,e+c\,f)\,\sqrt{-\frac{-d\,g+c\,h}{h}}\,\sqrt{\Big(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+}$$

$$\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\Big)\Big) - \Big(3\,i\,b^2\,d^2\,e\,g\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}$$

$$\text{EllipticF}\Big[i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]\Big)\Big/\Big((b\,c-a\,d)^2$$

$$\sqrt{-\frac{-d\,g+c\,h}{h}}\,\sqrt{\Big(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\Big)}\Big) +$$

$$\Big(5\,i\,b^2\,c\,d\,f\,g\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \text{EllipticF}\Big[$$

$$i\,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\Big],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\Big]\Big)\Big/\Big((b\,c-a\,d)^2\,\sqrt{-\frac{-d\,g+c\,h}{h}}$$

$$\sqrt{\Big(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\Big)}\Big) -$$

$$\Big(2\,i\,a\,b\,d^2\,f\,g\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \text{EllipticF}\Big[$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right],\ \frac{(-d e+c f)\, h}{f\,(-d g+c h)}\right]\right) \Bigg/ \left((b c-a d)^2 \sqrt{-\frac{-d g+c h}{h}}\right.$$

$$\left.\sqrt{\left(f h+\frac{d^2 e g-c d f g-c d e h+c^2 f h}{(c+d x)^2}+\frac{d f g+d e h-2 c f h}{c+d x}\right)}\right)-$$

$$\left(2\,\mathrm{i}\, b d f g \sqrt{1-\frac{-d e+c f}{f\,(c+d x)}}\ \sqrt{1-\frac{-d g+c h}{h\,(c+d x)}}\ \mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right],\right.\right.$$

$$\left.\left.\frac{(-d e+c f)\, h}{f\,(-d g+c h)}\right]\right) \Bigg/ \left((b c-a d) \sqrt{-\frac{-d g+c h}{h}}\right.$$

$$\left.\sqrt{\left(f h+\frac{d^2 e g-c d f g-c d e h+c^2 f h}{(c+d x)^2}+\frac{d f g+d e h-2 c f h}{c+d x}\right)}\right)+$$

$$\left(5\,\mathrm{i}\, b^2 c d e h \sqrt{1-\frac{-d e+c f}{f\,(c+d x)}}\ \sqrt{1-\frac{-d g+c h}{h\,(c+d x)}}\ \mathrm{EllipticF}\left[\right.\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right],\ \frac{(-d e+c f)\, h}{f\,(-d g+c h)}\right]\right) \Bigg/ \left((b c-a d)^2 \sqrt{-\frac{-d g+c h}{h}}\right.$$

$$\left.\sqrt{\left(f h+\frac{d^2 e g-c d f g-c d e h+c^2 f h}{(c+d x)^2}+\frac{d f g+d e h-2 c f h}{c+d x}\right)}\right)-$$

$$\left(2\,\mathrm{i}\, a b d^2 e h \sqrt{1-\frac{-d e+c f}{f\,(c+d x)}}\ \sqrt{1-\frac{-d g+c h}{h\,(c+d x)}}\ \mathrm{EllipticF}\left[\right.\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Bigg/\left((b\,c-a\,d)^2\,\sqrt{-\frac{-d\,g+c\,h}{h}}\right.$$

$$\left.\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\right)-$$

$$\left(2\,\mathbb{i}\,b\,d\,e\,h\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\,\text{EllipticF}\left[\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\right.\right.$$

$$\left.\left.\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Bigg/\left((b\,c-a\,d)\,\sqrt{-\frac{-d\,g+c\,h}{h}}\right.$$

$$\left.\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\right)-$$

$$\left(7\,\mathbb{i}\,b^2\,c^2\,f\,h\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\,\text{EllipticF}\left[\right.\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Bigg/\left((b\,c-a\,d)^2\,\sqrt{-\frac{-d\,g+c\,h}{h}}\right.$$

$$\left.\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\right)+$$

$$\left(4\,\mathbb{i}\,a\,b\,c\,d\,f\,h\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\,\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\,\text{EllipticF}\left[\right.\right.$$

$$\left.\left.\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Big/\left((b\,c-a\,d)^2\sqrt{-\frac{-d\,g+c\,h}{h}}\right.$$

$$\left.\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\right)+$$

$$\left(5\,\mathrm{i}\,b\,c\,f\,h\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\right.\right.$$

$$\left.\left.\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Big/\left((b\,c-a\,d)\sqrt{-\frac{-d\,g+c\,h}{h}}\right.$$

$$\left.\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\right)-$$

$$\left(\mathrm{i}\,a\,d\,f\,h\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \mathrm{EllipticF}\left[\mathrm{i}\,\mathrm{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\right.\right.$$

$$\left.\left.\frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Big/\left((b\,c-a\,d)\sqrt{-\frac{-d\,g+c\,h}{h}}\right.$$

$$\left.\sqrt{\left(f\,h+\frac{d^2\,e\,g-c\,d\,f\,g-c\,d\,e\,h+c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g+d\,e\,h-2\,c\,f\,h}{c+d\,x}\right)}\right)+\frac{1}{(b\,c-a\,d)^3}$$

$$3\,b^3\,d^2\,e\,g\left(\left(\mathrm{i}\,c\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \mathrm{EllipticPi}\left[\frac{(b\,c-a\,d)\,h}{b\,(-d\,g+c\,h)},\right.\right.\right.$$

$$\left.\left.\mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Bigg/\left(\sqrt{-\frac{-d\,g+c\,h}{h}}\ \sqrt{\Bigg(f\,h+}\right.$$

$$\left.\left.\frac{d^2\,e\,g}{(c+d\,x)^2}-\frac{c\,d\,f\,g}{(c+d\,x)^2}-\frac{c\,d\,e\,h}{(c+d\,x)^2}+\frac{c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g}{c+d\,x}+\frac{d\,e\,h}{c+d\,x}-\frac{2\,c\,f\,h}{c+d\,x}\right)\right)-$$

$$\left(\mathbb{i}\,a\,d\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\ \sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \text{EllipticPi}\left[\frac{(b\,c-a\,d)\,h}{b\,(-d\,g+c\,h)},\ \mathbb{i}\,\text{ArcSinh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Bigg/\left(b\,\sqrt{-\frac{-d\,g+c\,h}{h}}\ \sqrt{\Bigg(f\,h+\frac{d^2\,e\,g}{(c+d\,x)^2}-}\right.$$

$$\left.\left.\left.\frac{c\,d\,f\,g}{(c+d\,x)^2}-\frac{c\,d\,e\,h}{(c+d\,x)^2}+\frac{c^2\,f\,h}{(c+d\,x)^2}+\frac{d\,f\,g}{c+d\,x}+\frac{d\,e\,h}{c+d\,x}-\frac{2\,c\,f\,h}{c+d\,x}\right)\right)\right)-$$

$$\frac{1}{(b\,c-a\,d)^3}5\,b^3\,c\,d\,f\,g\,\left(\left(\mathbb{i}\,c\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\ \sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\ \text{EllipticPi}\left[\right.\right.\right.$$

$$\left.\left.\frac{(b\,c-a\,d)\,h}{b\,(-d\,g+c\,h)},\ \mathbb{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d\,g+c\,h}{h}}}{\sqrt{c+d\,x}}\right],\ \frac{(-d\,e+c\,f)\,h}{f\,(-d\,g+c\,h)}\right]\right)\Bigg/$$

$$\left(\sqrt{-\frac{-d\,g+c\,h}{h}}\ \sqrt{\Bigg(f\,h+\frac{d^2\,e\,g}{(c+d\,x)^2}-\frac{c\,d\,f\,g}{(c+d\,x)^2}-\frac{c\,d\,e\,h}{(c+d\,x)^2}+\frac{c^2\,f\,h}{(c+d\,x)^2}+}\right.$$

$$\left.\left.\frac{d\,f\,g}{c+d\,x}+\frac{d\,e\,h}{c+d\,x}-\frac{2\,c\,f\,h}{c+d\,x}\right)\right)-\left(\mathbb{i}\,a\,d\,\sqrt{1-\frac{-d\,e+c\,f}{f\,(c+d\,x)}}\ \sqrt{1-\frac{-d\,g+c\,h}{h\,(c+d\,x)}}\right.$$

$$\text{EllipticPi}\left[\frac{(b c-a d) h}{b(-d g+c h)}, \text{i} \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f(-d g+c h)}\right]\Bigg) \Bigg/$$

$$\left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\right.}\right.$$

$$\left.\left.\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\Bigg)+\frac{1}{(b c-a d)^3}$$

$$2 a b^2 d^2 f g\left(\left(\text{i} c \sqrt{1-\frac{-d e+c f}{f(c+d x)}} \sqrt{1-\frac{-d g+c h}{h(c+d x)}} \text{EllipticPi}\left[\frac{(b c-a d) h}{b(-d g+c h)},\right.\right.\right.$$

$$\left.\text{i} \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f(-d g+c h)}\right]\Bigg) \Bigg/ \left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\right.}\right.$$

$$\left.\left.\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-$$

$$\left(\text{i} a d \sqrt{1-\frac{-d e+c f}{f(c+d x)}} \sqrt{1-\frac{-d g+c h}{h(c+d x)}} \text{EllipticPi}\left[\frac{(b c-a d) h}{b(-d g+c h)}, \text{i} \text{ArcSinh}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f(-d g+c h)}\right]\Bigg) \Bigg/ \left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\right.}\right.$$

$$\left.\left.\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\Bigg)+$$

$$\frac{1}{(b c-a d)^2} 2 b^2 d f g \Bigg(\Bigg(\mathrm{i}\, c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \text{EllipticPi}\Big[$$

$$\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i} \,\text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big], \frac{(-d e+c f) h}{f (-d g+c h)}\Big]\Bigg) \Big/$$

$$\Bigg(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\Bigg(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+}$$

$$\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\Bigg)\Bigg)-\Bigg(\mathrm{i}\, a d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}}$$

$$\text{EllipticPi}\Big[\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big], \frac{(-d e+c f) h}{f (-d g+c h)}\Big]\Bigg) \Big/$$

$$\Bigg(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\Bigg(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+}$$

$$\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\Bigg)\Bigg)\Bigg)-\frac{1}{(b c-a d)^3}$$

$$5 b^3 c d e h \Bigg(\Bigg(\mathrm{i}\, c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \text{EllipticPi}\Big[\frac{(b c-a d) h}{b (-d g+c h)},$$

$$\mathrm{i}\, \text{ArcSinh}\Big[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\Big], \frac{(-d e+c f) h}{f (-d g+c h)}\Big]\Bigg) \Big/ \Bigg(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\Bigg(f h+}$$

$$\left.\left.\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-$$

$$\left(\mathrm{i}\, a\, d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}}\ \text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\right.}\right.$$

$$\left.\left.\left.\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\right)+$$

$$\frac{1}{(b c-a d)^3} 2 a b^2 d^2 e h \left(\left(\mathrm{i}\, c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}}\ \text{EllipticPi}\left[\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/$$

$$\left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\right.}\right.$$

$$\left.\left.\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-\left(\mathrm{i}\, a\, d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}}\right.$$

$$\left.\text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/$$

$$\left(b\sqrt{-\frac{-d g+c h}{h}}\sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)}\right)+\frac{1}{(b c-a d)^2}$$

$$2 b^2 d e h\left(\left(\mathrm{i}\, c\sqrt{1-\frac{-d e+c f}{f (c+d x)}}\sqrt{1-\frac{-d g+c h}{h (c+d x)}}\,\text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)},\right.\right.\right.$$

$$\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right],\frac{(-d e+c f) h}{f (-d g+c h)}\right]\right)\Big/\left(\sqrt{-\frac{-d g+c h}{h}}\sqrt{\left(f h+\right.}\right.$$

$$\left.\left.\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-$$

$$\left(\mathrm{i}\, a d\sqrt{1-\frac{-d e+c f}{f (c+d x)}}\sqrt{1-\frac{-d g+c h}{h (c+d x)}}\,\text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)},\mathrm{i}\,\text{ArcSinh}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right],\frac{(-d e+c f) h}{f (-d g+c h)}\right]\right)\Big/\left(b\sqrt{-\frac{-d g+c h}{h}}\sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\right.}\right.$$

$$\left.\left.\left.\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\right)+$$

$$\frac{1}{(b c-a d)^3}7 b^3 c^2 f h\left(\left(\mathrm{i}\, c\sqrt{1-\frac{-d e+c f}{f (c+d x)}}\sqrt{1-\frac{-d g+c h}{h (c+d x)}}\,\text{EllipticPi}\left[\right.\right.\right.$$

$$\frac{(b c-a d) h}{b (-d g+c h)}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\Bigg]\Bigg) \Bigg/$$

$$\left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\right.}\right.$$

$$\left.\left.\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-\left(\mathbb{i} a d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}}\right.$$

$$\left.\operatorname{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Bigg/$$

$$\left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\right.}\right.$$

$$\left.\left.\left.\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\right)-\frac{1}{(b c-a d)^3}$$

$$4 a b^2 c d f h\left(\left(\left(\mathbb{i} c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \operatorname{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)},\right.\right.\right.\right.$$

$$\left.\left.\mathbb{i} \operatorname{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Bigg/ \left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\right.}\right.$$

$$\left.\left.\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-$$

$$\left(\mathrm{i}\, a\, d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \,\text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)}\right)\right) -$$

$$\frac{1}{(b c-a d)^2} 5 b^2 c f h \left(\left(\left(\mathrm{i}\, c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \,\text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)}\right) - \left(\mathrm{i}\, a\, d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \,\text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathrm{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\right.}\right.\right.$$

$$\left.\left.\left.\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\right)+\frac{1}{(b c-a d)^2}$$

$$a b d f h\left(\left(\mathbb{i}\, c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)},\right.\right.\right.$$

$$\left.\left.\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\right.}\right.$$

$$\left.\left.\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-$$

$$\left(\mathbb{i}\, a d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, \mathbb{i}\, \text{ArcSinh}\left[\right.\right.\right.$$

$$\left.\left.\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(b \sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\frac{d^2 e g}{(c+d x)^2}-\right.}\right.$$

$$\left.\left.\left.\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\right)+\frac{1}{b c-a d}$$

$$b f h\left(\left(\mathbb{i}\, c \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)},\right.\right.\right.$$

$$\left.\left.\mathbb{i}\, \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Big/ \left(\sqrt{-\frac{-d g+c h}{h}} \sqrt{\left(f h+\right.}\right.$$

$$\left.\left.\frac{d^2 e g}{(c+d x)^2}-\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)-$$

$$\left(i a d \sqrt{1-\frac{-d e+c f}{f (c+d x)}} \sqrt{1-\frac{-d g+c h}{h (c+d x)}} \text{EllipticPi}\left[\frac{(b c-a d) h}{b (-d g+c h)}, i \text{ArcSinh}\left[\frac{\sqrt{-\frac{-d g+c h}{h}}}{\sqrt{c+d x}}\right], \frac{(-d e+c f) h}{f (-d g+c h)}\right]\right) \Bigg/ \left(b \sqrt{-\frac{-d g+c h}{h}} \Bigg/ \left(f h+\frac{d^2 e g}{(c+d x)^2}-\right.\right.$$

$$\left.\left.\left.\left.\frac{c d f g}{(c+d x)^2}-\frac{c d e h}{(c+d x)^2}+\frac{c^2 f h}{(c+d x)^2}+\frac{d f g}{c+d x}+\frac{d e h}{c+d x}-\frac{2 c f h}{c+d x}\right)\right)\right)\right) \Big/$$

$$\left(\left(b f h+\frac{3 b d^2 e g}{(c+d x)^2}-\frac{5 b c d f g}{(c+d x)^2}+\frac{2 a d^2 f g}{(c+d x)^2}-\frac{5 b c d e h}{(c+d x)^2}+\frac{2 a d^2 e h}{(c+d x)^2}+\frac{7 b c^2 f h}{(c+d x)^2}-\right.\right.$$

$$\left.\frac{4 a c d f h}{(c+d x)^2}+\frac{2 b d f g}{c+d x}+\frac{2 b d e h}{c+d x}-\frac{5 b c f h}{c+d x}+\frac{a d f h}{c+d x}\right)$$

$$\left.\sqrt{e+\frac{(c+d x)\left(f-\frac{c f}{c+d x}\right)}{d}} \sqrt{g+\frac{(c+d x)\left(h-\frac{c h}{c+d x}\right)}{d}}\right)$$

Problem 73: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b x) \sqrt{c+d x} \sqrt{1-f x} \sqrt{1+f x}} \, dx$$

Optimal (type 4, 74 leaves, 3 steps):

$$-\frac{2 \sqrt{\frac{f (c+d x)}{d+c f}} \text{EllipticPi}\left[\frac{2 b}{b+a f}, \text{ArcSin}\left[\frac{\sqrt{1-f x}}{\sqrt{2}}\right], \frac{2 d}{d+c f}\right]}{(b+a f) \sqrt{c+d x}}$$

Result (type 4, 203 leaves):

$$\left(2\,\mathrm{i}\,(c+d\,x)\sqrt{\frac{d\,(-1+f\,x)}{f\,(c+d\,x)}}\,\sqrt{\frac{d+d\,f\,x}{c\,f+d\,f\,x}}\right.$$

$$\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{d+c\,f}{f}}}{\sqrt{c+d\,x}}\right],\frac{-d+c\,f}{d+c\,f}\right]-\text{EllipticPi}\left[\frac{b\,c\,f-a\,d\,f}{b\,d+b\,c\,f},\right.\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{d+c\,f}{f}}}{\sqrt{c+d\,x}}\right],\frac{-d+c\,f}{d+c\,f}\right]\right)\right)\Big/\left((-b\,c+a\,d)\sqrt{-\frac{d+c\,f}{f}}\,\sqrt{1-f^2\,x^2}\right)$$

Problem 74: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b\,x)\sqrt{c+d\,x}\,\sqrt{1-f^2\,x^2}}\,dx$$

Optimal (type 4, 74 leaves, 4 steps):

$$-\frac{2\sqrt{\frac{f\,(c+d\,x)}{d+c\,f}}\,\text{EllipticPi}\left[\frac{2\,b}{b+a\,f},\text{ArcSin}\left[\frac{\sqrt{1-f\,x}}{\sqrt{2}}\right],\frac{2\,d}{d+c\,f}\right]}{(b+a\,f)\sqrt{c+d\,x}}$$

Result (type 4, 203 leaves):

$$\left(2\,\mathrm{i}\,(c+d\,x)\sqrt{\frac{d\,(-1+f\,x)}{f\,(c+d\,x)}}\,\sqrt{\frac{d+d\,f\,x}{c\,f+d\,f\,x}}\right.$$

$$\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{d+c\,f}{f}}}{\sqrt{c+d\,x}}\right],\frac{-d+c\,f}{d+c\,f}\right]-\text{EllipticPi}\left[\frac{b\,c\,f-a\,d\,f}{b\,d+b\,c\,f},\right.\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-\frac{d+c\,f}{f}}}{\sqrt{c+d\,x}}\right],\frac{-d+c\,f}{d+c\,f}\right]\right)\right)\Big/\left((-b\,c+a\,d)\sqrt{-\frac{d+c\,f}{f}}\,\sqrt{1-f^2\,x^2}\right)$$

Problem 75: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b x) \sqrt{c+d x} \sqrt{1-f^2 x} \sqrt{1+f^2 x}} \, dx$$

Optimal (type 4, 86 leaves, 3 steps):

$$-\frac{2 \sqrt{\frac{f^2 (c+d x)}{d+c f^2}} \text{EllipticPi}\left[\frac{2 b}{b+a f^2}, \text{ArcSin}\left[\frac{\sqrt{1-f^2 x}}{\sqrt{2}}\right], \frac{2 d}{d+c f^2}\right]}{\left(b+a f^2\right) \sqrt{c+d x}}$$

Result (type 4, 218 leaves):

$$\left(2 i (c+d x) \sqrt{\frac{d \left(-1+f^2 x\right)}{f^2 (c+d x)}} \sqrt{\frac{d \left(1+f^2 x\right)}{f^2 (c+d x)}} \left(\text{EllipticF}\left[i \text{ArcSinh}\left[\frac{\sqrt{-c-\frac{d}{f^2}}}{\sqrt{c+d x}}\right], \frac{-d+c f^2}{d+c f^2}\right] - \text{EllipticPi}\left[\frac{(b c-a d) f^2}{b \left(d+c f^2\right)}, i \text{ArcSinh}\left[\frac{\sqrt{-c-\frac{d}{f^2}}}{\sqrt{c+d x}}\right], \frac{-d+c f^2}{d+c f^2}\right]\right)\right) \Bigg/ \left((-b c+a d) \sqrt{-c-\frac{d}{f^2}} \sqrt{1-f^4 x^2}\right)$$

Problem 76: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{1}{(a+b x) \sqrt{c+d x} \sqrt{1-f^4 x^2}} \, dx$$

Optimal (type 4, 86 leaves, 4 steps):

$$-\frac{2 \sqrt{\frac{f^2 (c+d x)}{d+c f^2}} \text{EllipticPi}\left[\frac{2 b}{b+a f^2}, \text{ArcSin}\left[\frac{\sqrt{1-f^2 x}}{\sqrt{2}}\right], \frac{2 d}{d+c f^2}\right]}{\left(b+a f^2\right) \sqrt{c+d x}}$$

Result (type 4, 218 leaves):

$$\left(2\,\mathrm{i}\,(c+d\,x)\,\sqrt{\frac{d\,(-1+f^2\,x)}{f^2\,(c+d\,x)}}\,\sqrt{\frac{d\,(1+f^2\,x)}{f^2\,(c+d\,x)}}\right.$$

$$\left(\text{EllipticF}\left[\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-c-\frac{d}{f^2}}}{\sqrt{c+d\,x}}\right],\frac{-d+c\,f^2}{d+c\,f^2}\right]-\text{EllipticPi}\left[\frac{(b\,c-a\,d)\,f^2}{b\,(d+c\,f^2)},\right.\right.$$

$$\left.\left.\left.\mathrm{i}\,\text{ArcSinh}\left[\frac{\sqrt{-c-\frac{d}{f^2}}}{\sqrt{c+d\,x}}\right],\frac{-d+c\,f^2}{d+c\,f^2}\right]\right)\right)\Big/\left((-b\,c+a\,d)\,\sqrt{-c-\frac{d}{f^2}}\,\sqrt{1-f^4\,x^2}\right)$$

Problem 97: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{2-3\,x}}{\sqrt{-5+2\,x}\,\sqrt{1+4\,x}\,(7+5\,x)^{3/2}}\,dx$$

Optimal (type 4, 60 leaves, 5 steps):

$$\frac{2\,\sqrt{\frac{11}{39}}\,\sqrt{5-2\,x}\,\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{\frac{39}{22}}\,\sqrt{1+4\,x}}{\sqrt{7+5\,x}}\right],\frac{62}{39}\right]}{23\,\sqrt{-5+2\,x}}$$

Result (type 4, 237 leaves):

$$\left(\sqrt{-5+2\,x}\,\sqrt{1+4\,x}\right.$$

$$\left(-1922\,\sqrt{\frac{7+5\,x}{-2+3\,x}}\,(-5-18\,x+8\,x^2)+62\,\sqrt{682}\,\sqrt{\frac{-5-18\,x+8\,x^2}{(2-3\,x)^2}}\,(-14+11\,x+15\,x^2)\right.$$

$$\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{31}{39}}\,\sqrt{\frac{-5+2\,x}{-2+3\,x}}\right],\frac{39}{62}\right]-23\,\sqrt{682}\,\sqrt{\frac{-5-18\,x+8\,x^2}{(2-3\,x)^2}}$$

$$\left.\left.(-14+11\,x+15\,x^2)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{31}{39}}\,\sqrt{\frac{-5+2\,x}{-2+3\,x}}\right],\frac{39}{62}\right]\right)\right)\Big/$$

$$\left(27\,807\,\sqrt{2-3\,x}\,\sqrt{7+5\,x}\,\sqrt{\frac{7+5\,x}{-2+3\,x}}\,(-5-18\,x+8\,x^2)\right)$$

Problem 99: Result more than twice size of optimal antiderivative.

$$\int \frac{\sqrt{a+b x}\ \sqrt{c+d x}}{\sqrt{e+f x}\ \sqrt{g+h x}}\, dx$$

Optimal (type 4, 721 leaves, 7 steps):

$$\frac{\sqrt{a+b x}\ \sqrt{c+d x}\ \sqrt{g+h x}}{h \sqrt{e+f x}} - \left(\sqrt{d g-c h}\ \sqrt{f g-e h}\ \sqrt{a+b x}\ \sqrt{\frac{(d e-c f)\ (g+h x)}{(d g-c h)\ (e+f x)}}\ \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{f g-e h}\ \sqrt{c+d x}}{\sqrt{d g-c h}\ \sqrt{e+f x}}\right], \frac{(b e-a f)\ (d g-c h)}{(b c-a d)\ (f g-e h)}\right]\right) \Bigg/ \left(f h \sqrt{-\frac{(d e-c f)\ (a+b x)}{(b c-a d)\ (e+f x)}}\ \sqrt{g+h x}\right) + \left((d e-c f)\ (b f g+b e h-2 a f h) \sqrt{\frac{(b e-a f)\ (c+d x)}{(d e-c f)\ (a+b x)}}\ \sqrt{g+h x}\ \text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{b g-a h}\ \sqrt{e+f x}}{\sqrt{f g-e h}\ \sqrt{a+b x}}\right], -\frac{(b c-a d)\ (f g-e h)}{(d e-c f)\ (b g-a h)}\right]\right) \Bigg/ \left(f^2 h \sqrt{b g-a h}\ \sqrt{f g-e h}\ \sqrt{c+d x}\ \sqrt{-\frac{(b e-a f)\ (g+h x)}{(f g-e h)\ (a+b x)}}\right) + \left(\sqrt{b g-a h}\ (a d f h-b (d f g+d e h-c f h)) \sqrt{\frac{(f g-e h)\ (a+b x)}{(b g-a h)\ (e+f x)}}\ \sqrt{\frac{(f g-e h)\ (c+d x)}{(d g-c h)\ (e+f x)}}\ (e+f x)\ \text{EllipticPi}\left[\frac{f (b g-a h)}{(b e-a f) h}, \text{ArcSin}\left[\frac{\sqrt{b e-a f}\ \sqrt{g+h x}}{\sqrt{b g-a h}\ \sqrt{e+f x}}\right], \frac{(d e-c f)\ (b g-a h)}{(b e-a f)\ (d g-c h)}\right]\right) \Bigg/ \left(f^2 \sqrt{b e-a f}\ h^2 \sqrt{a+b x}\ \sqrt{c+d x}\right)$$

Result (type 4, 6667 leaves):

$$-\frac{1}{f} 2 \left(-\left(\left(\left(\sqrt{e+f x}\ \left(h+\frac{f g}{e+f x}-\frac{e h}{e+f x}\right) \sqrt{a+\frac{(e+f x)\ \left(b-\frac{b e}{e+f x}\right)}{f}}\ \sqrt{c+\frac{(e+f x)\ \left(d-\frac{d e}{e+f x}\right)}{f}}\right) \Bigg/ \left(2 h \sqrt{g+\frac{(e+f x)\ \left(h-\frac{e h}{e+f x}\right)}{f}}\right)\right) + \right.\right.$$

$$\Bigg(1\Bigg/\Bigg(2\,h^2\,\sqrt{e+f\,x}\,\left(b-\frac{b\,e}{e+f\,x}+\frac{a\,f}{e+f\,x}\right)\left(d-\frac{d\,e}{e+f\,x}+\frac{c\,f}{e+f\,x}\right)\sqrt{g+\frac{(e+f\,x)\left(h-\frac{e\,h}{e+f\,x}\right)}{f}}\Bigg)\Bigg)$$

$$f\,(b\,g-a\,h)\,(f\,g-e\,h)\,\sqrt{\left(\left(b-\frac{b\,e}{e+f\,x}+\frac{a\,f}{e+f\,x}\right)\left(d-\frac{d\,e}{e+f\,x}+\frac{c\,f}{e+f\,x}\right)\left(h+\frac{f\,g}{e+f\,x}-\frac{e\,h}{e+f\,x}\right)\right)}$$

$$\sqrt{a+\frac{(e+f\,x)\left(b-\frac{b\,e}{e+f\,x}\right)}{f}}\,\sqrt{c+\frac{(e+f\,x)\left(d-\frac{d\,e}{e+f\,x}\right)}{f}}$$

$$\Bigg(\Bigg(d\,\sqrt{\frac{-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}}{-\frac{b}{b\,e-a\,f}+\frac{h}{-f\,g+e\,h}}}\,\sqrt{\frac{-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}}{-\frac{d}{d\,e-c\,f}+\frac{h}{-f\,g+e\,h}}}\,\left(-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}\right)$$

$$\text{EllipticF}\Big[\text{ArcSin}\Big[\sqrt{\frac{(d\,e-c\,f)\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\Big],\ \frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\Big]\Bigg/$$

$$\left(\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}\,\sqrt{\left(b+\frac{-b\,e+a\,f}{e+f\,x}\right)\left(d+\frac{-d\,e+c\,f}{e+f\,x}\right)\left(h+\frac{f\,g-e\,h}{e+f\,x}\right)}\right)-$$

$$\Bigg(d\,e\,\sqrt{-\frac{(b\,e-a\,f)\,(-f\,g+e\,h)\left(-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}\right)}{-b\,f\,g+a\,f\,h}}\,\left(-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}\right)\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}$$

$$\Bigg(\Bigg((-b\,f\,g+a\,f\,h)\,\text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\frac{(d\,e-c\,f)\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\Big],$$

$$\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\Big]\Bigg)\Bigg/\big((b\,e-a\,f)\,(-f\,g+e\,h)\big)-\frac{1}{b\,e-a\,f}b\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(d\,e-c\,f)\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\Big],\ \frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\Big]\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}}{-\frac{d}{d\,e-c\,f}+\frac{h}{-f\,g+e\,h}}}\,\sqrt{\left(b+\frac{-b\,e+a\,f}{e+f\,x}\right)\left(d+\frac{-d\,e+c\,f}{e+f\,x}\right)\left(h+\frac{f\,g-e\,h}{e+f\,x}\right)}\right)+$$

$$\left(c\,f\sqrt{-\frac{(b\,e-a\,f)\,(-f\,g+e\,h)\left(-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}\right)}{-b\,f\,g+a\,f\,h}}\left(-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}\right)\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}\right.$$

$$\left(\left(\left(-b\,f\,g+a\,f\,h\right)\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\right]\right)\Big/\left((b\,e-a\,f)\,(-f\,g+e\,h)\right)-\frac{1}{b\,e-a\,f}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\right]\right)\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}}{-\frac{d}{d\,e-c\,f}+\frac{h}{-f\,g+e\,h}}}\sqrt{\left(b+\frac{-b\,e+a\,f}{e+f\,x}\right)\left(d+\frac{-d\,e+c\,f}{e+f\,x}\right)\left(h+\frac{f\,g-e\,h}{e+f\,x}\right)}\right)\right)-$$

$$\left(1\Big/\left(2\,d\,h\sqrt{e+f\,x}\left(b-\frac{b\,e}{e+f\,x}+\frac{a\,f}{e+f\,x}\right)\left(d-\frac{d\,e}{e+f\,x}+\frac{c\,f}{e+f\,x}\right)\sqrt{g+\frac{(e+f\,x)\left(h-\frac{e\,h}{e+f\,x}\right)}{f}}\right)\right)$$

$$(b\,c-a\,d)\,f\,(-d\,e+c\,f)$$

$$\sqrt{\left(\left(b-\frac{b\,e}{e+f\,x}+\frac{a\,f}{e+f\,x}\right)\left(d-\frac{d\,e}{e+f\,x}+\frac{c\,f}{e+f\,x}\right)\left(h+\frac{f\,g}{e+f\,x}-\frac{e\,h}{e+f\,x}\right)\right)}$$

$$\sqrt{a+\frac{(e+f\,x)\left(b-\frac{b\,e}{e+f\,x}\right)}{f}}\sqrt{c+\frac{(e+f\,x)\left(d-\frac{d\,e}{e+f\,x}\right)}{f}}$$

$$\left(\left(h\sqrt{\frac{-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}}{-\frac{b}{b\,e-a\,f}+\frac{h}{-f\,g+e\,h}}}\sqrt{\frac{-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}}{-\frac{d}{d\,e-c\,f}+\frac{h}{-f\,g+e\,h}}}\left(-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}\right)\right.\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}\sqrt{\left(b+\frac{-b\,e+a\,f}{e+f\,x}\right)\left(d+\frac{-d\,e+c\,f}{e+f\,x}\right)\left(h+\frac{f\,g-e\,h}{e+f\,x}\right)}\right)+$$

$$\left(f g \sqrt{-\frac{(b e-a f)(-f g+e h)\left(-\frac{b}{b e-a f}+\frac{1}{e+f x}\right)}{-b f g+a f h}} \left(-\frac{d}{d e-c f}+\frac{1}{e+f x}\right) \sqrt{\frac{-\frac{h}{-f g+e h}+\frac{1}{e+f x}}{\frac{d}{d e-c f}-\frac{h}{-f g+e h}}}\right.$$

$$\left(\left(\left((-b f g+a f h) \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\right.\right.\right.\right.$$

$$\left.\left.\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right) \Big/ ((b e-a f)(-f g+e h)) - \frac{1}{b e-a f} b \, \text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right], \frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right) \Big/$$

$$\left(\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}} \sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right) -$$

$$\left(e h \sqrt{-\frac{(b e-a f)(-f g+e h)\left(-\frac{b}{b e-a f}+\frac{1}{e+f x}\right)}{-b f g+a f h}} \left(-\frac{d}{d e-c f}+\frac{1}{e+f x}\right) \sqrt{\frac{-\frac{h}{-f g+e h}+\frac{1}{e+f x}}{\frac{d}{d e-c f}-\frac{h}{-f g+e h}}}\right.$$

$$\left(\left(\left((-b f g+a f h) \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\right.\right.\right.\right.$$

$$\left.\left.\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right) \Big/ ((b e-a f)(-f g+e h)) - \frac{1}{b e-a f} b \, \text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right], \frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right) \Big/$$

$$\left.\left(\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}} \sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)\right) -$$

$$\left(1 \Big/ \left(2 d h^2 \sqrt{e+f x} \left(b-\frac{b e}{e+f x}+\frac{a f}{e+f x}\right)\left(d-\frac{d e}{e+f x}+\frac{c f}{e+f x}\right) \sqrt{g+\frac{(e+f x)\left(h-\frac{e h}{e+f x}\right)}{f}}\right)\right)$$

$$\left(b d f g+b d e h-b c f h-a d f h\right)$$
$$\sqrt{\left(\left(b-\frac{b e}{e+f x}+\frac{a f}{e+f x}\right)\left(d-\frac{d e}{e+f x}+\frac{c f}{e+f x}\right)\left(h+\frac{f g}{e+f x}-\frac{e h}{e+f x}\right)\right)}$$
$$\sqrt{a+\frac{\left(e+f x\right)\left(b-\frac{b e}{e+f x}\right)}{f}}\;\sqrt{c+\frac{\left(e+f x\right)\left(d-\frac{d e}{e+f x}\right)}{f}}$$
$$\left(\left(d f g\sqrt{\frac{-\frac{b}{b e-a f}+\frac{1}{e+f x}}{-\frac{b}{b e-a f}+\frac{h}{-f g+e h}}}\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}}\left(-\frac{h}{-f g+e h}+\frac{1}{e+f x}\right)\right.\right.$$
$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(d e-c f\right)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f\left(-d g+c h\right)}}\right],\frac{\left(b e-a f\right)\left(-d g+c h\right)}{\left(d e-c f\right)\left(-b g+a h\right)}\right]\right)\Big/$$
$$\left(\sqrt{\frac{-\frac{h}{-f g+e h}+\frac{1}{e+f x}}{\frac{d}{d e-c f}-\frac{h}{-f g+e h}}}\sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)-$$
$$\left(2 d e h\sqrt{\frac{-\frac{b}{b e-a f}+\frac{1}{e+f x}}{-\frac{b}{b e-a f}+\frac{h}{-f g+e h}}}\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}}\left(-\frac{h}{-f g+e h}+\frac{1}{e+f x}\right)\right.$$
$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(d e-c f\right)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f\left(-d g+c h\right)}}\right],\frac{\left(b e-a f\right)\left(-d g+c h\right)}{\left(d e-c f\right)\left(-b g+a h\right)}\right]\right)\Big/$$
$$\left(\sqrt{\frac{-\frac{h}{-f g+e h}+\frac{1}{e+f x}}{\frac{d}{d e-c f}-\frac{h}{-f g+e h}}}\sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)+$$
$$\left(c f h\sqrt{\frac{-\frac{b}{b e-a f}+\frac{1}{e+f x}}{-\frac{b}{b e-a f}+\frac{h}{-f g+e h}}}\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}}\left(-\frac{h}{-f g+e h}+\frac{1}{e+f x}\right)\right.$$
$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(d e-c f\right)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f\left(-d g+c h\right)}}\right],\frac{\left(b e-a f\right)\left(-d g+c h\right)}{\left(d e-c f\right)\left(-b g+a h\right)}\right]\right)\Big/$$
$$\left(\sqrt{\frac{-\frac{h}{-f g+e h}+\frac{1}{e+f x}}{\frac{d}{d e-c f}-\frac{h}{-f g+e h}}}\sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)-\left(d e f\right.$$

$$g\sqrt{-\frac{(b\,e-a\,f)\,(-f\,g+e\,h)\,\left(-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}\right)}{-b\,f\,g+a\,f\,h}}\,\left(-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}\right)\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}$$

$$\Bigg(\Bigg(\left(-b\,f\,g+a\,f\,h\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\,\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\right.$$

$$\left.\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\right]\Bigg)\Big/\left((b\,e-a\,f)\,(-f\,g+e\,h)\right)-\frac{1}{b\,e-a\,f}b\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\,\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}}{-\frac{d}{d\,e-c\,f}+\frac{h}{-f\,g+e\,h}}}\,\sqrt{\left(b+\frac{-b\,e+a\,f}{e+f\,x}\right)\left(d+\frac{-d\,e+c\,f}{e+f\,x}\right)\left(h+\frac{f\,g-e\,h}{e+f\,x}\right)}\right)+\Bigg(c\,f^2$$

$$g\sqrt{-\frac{(b\,e-a\,f)\,(-f\,g+e\,h)\,\left(-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}\right)}{-b\,f\,g+a\,f\,h}}\,\left(-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}\right)\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}$$

$$\Bigg(\Bigg(\left(-b\,f\,g+a\,f\,h\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\,\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\right.$$

$$\left.\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\right]\Bigg)\Big/\left((b\,e-a\,f)\,(-f\,g+e\,h)\right)-\frac{1}{b\,e-a\,f}b\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\,\left(-h-\frac{f\,g}{e+f\,x}+\frac{e\,h}{e+f\,x}\right)}{f\,(-d\,g+c\,h)}}\right],\frac{(b\,e-a\,f)\,(-d\,g+c\,h)}{(d\,e-c\,f)\,(-b\,g+a\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}}{-\frac{d}{d\,e-c\,f}+\frac{h}{-f\,g+e\,h}}}\,\sqrt{\left(b+\frac{-b\,e+a\,f}{e+f\,x}\right)\left(d+\frac{-d\,e+c\,f}{e+f\,x}\right)\left(h+\frac{f\,g-e\,h}{e+f\,x}\right)}\right)+\Bigg(d\,e^2$$

$$h\sqrt{-\frac{(b\,e-a\,f)\,(-f\,g+e\,h)\,\left(-\frac{b}{b\,e-a\,f}+\frac{1}{e+f\,x}\right)}{-b\,f\,g+a\,f\,h}}\,\left(-\frac{d}{d\,e-c\,f}+\frac{1}{e+f\,x}\right)\sqrt{\frac{-\frac{h}{-f\,g+e\,h}+\frac{1}{e+f\,x}}{\frac{d}{d\,e-c\,f}-\frac{h}{-f\,g+e\,h}}}$$

$$\left(\left(\left(-b f g+a f h\right) \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right)\Big/\left((b e-a f)(-f g+e h)\right)-\frac{1}{b e-a f} b\, \text{EllipticF}\left[\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}} \sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)-\left(c e f\right.$$

$$h \sqrt{-\frac{(b e-a f)(-f g+e h)\left(-\frac{b}{b e-a f}+\frac{1}{e+f x}\right)}{-b f g+a f h}}\left(-\frac{d}{d e-c f}+\frac{1}{e+f x}\right) \sqrt{\frac{-\frac{h}{-f g+e h}+\frac{1}{e+f x}}{\frac{d}{d e-c f}-\frac{h}{-f g+e h}}}$$

$$\left(\left(\left(-b f g+a f h\right) \text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right)\Big/\left((b e-a f)(-f g+e h)\right)-\frac{1}{b e-a f} b\, \text{EllipticF}\left[\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{d}{d e-c f}+\frac{1}{e+f x}}{-\frac{d}{d e-c f}+\frac{h}{-f g+e h}}} \sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)-$$

$$\left(d(-f g+e h)\left(-\frac{d}{d e-c f}+\frac{h}{-f g+e h}\right) \sqrt{\frac{-\frac{b}{b e-a f}+\frac{1}{e+f x}}{-\frac{b}{b e-a f}+\frac{h}{-f g+e h}}}\right.$$

$$\sqrt{-\frac{\left(-\frac{d}{d e-c f}+\frac{1}{e+f x}\right)\left(-\frac{h}{-f g+e h}+\frac{1}{e+f x}\right)}{\left(-\frac{d}{d e-c f}+\frac{h}{-f g+e h}\right)^2}}\ \text{EllipticPi}\left[-\frac{-d f g+c f h}{(d e-c f) h},\right.$$

$$\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(-h-\frac{f g}{e+f x}+\frac{e h}{e+f x}\right)}{f(-d g+c h)}}\right],\frac{(b e-a f)(-d g+c h)}{(d e-c f)(-b g+a h)}\Bigg]\Bigg)\Bigg/$$

$$\left(\sqrt{\left(b+\frac{-b e+a f}{e+f x}\right)\left(d+\frac{-d e+c f}{e+f x}\right)\left(h+\frac{f g-e h}{e+f x}\right)}\right)\Bigg)\Bigg)$$

Problem 107: Result more than twice size of optimal antiderivative.

$$\int \frac{(a+b x)^{3/2}}{\sqrt{c+d x}\,\sqrt{e+f x}\,\sqrt{g+h x}}\,dx$$

Optimal (type 4, 968 leaves, 10 steps):

$$\frac{b\sqrt{a+b x}\ \sqrt{c+d x}\ \sqrt{g+h x}}{d h\sqrt{e+f x}}-$$

$$\left(b\sqrt{d g-c h}\ \sqrt{f g-e h}\ \sqrt{a+b x}\ \sqrt{\frac{(d e-c f)\ (g+h x)}{(d g-c h)\ (e+f x)}}\ \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{f g-e h}\ \sqrt{c+d x}}{\sqrt{d g-c h}\ \sqrt{e+f x}}\right],\right.\right.$$

$$\left.\left.\frac{(b e-a f)\ (d g-c h)}{(b c-a d)\ (f g-e h)}\right]\right)\Bigg/\left(d f h\sqrt{-\frac{(d e-c f)\ (a+b x)}{(b c-a d)\ (e+f x)}}\ \sqrt{g+h x}\right)+$$

$$\left(b\ (d e-c f)\ (b f g+b e h-2 a f h)\sqrt{\frac{(b e-a f)\ (c+d x)}{(d e-c f)\ (a+b x)}}\ \sqrt{g+h x}\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{b g-a h}\ \sqrt{e+f x}}{\sqrt{f g-e h}\ \sqrt{a+b x}}\right],-\frac{(b c-a d)\ (f g-e h)}{(d e-c f)\ (b g-a h)}\right]\right)\Bigg/$$

$$\left(d f^2 h\sqrt{b g-a h}\ \sqrt{f g-e h}\ \sqrt{c+d x}\ \sqrt{-\frac{(b e-a f)\ (g+h x)}{(f g-e h)\ (a+b x)}}\right)+$$

$$\left(b\sqrt{b g-a h}\ (a d f h-b\ (d f g+d e h-c f h))\sqrt{\frac{(f g-e h)\ (a+b x)}{(b g-a h)\ (e+f x)}}\ \sqrt{\frac{(f g-e h)\ (c+d x)}{(d g-c h)\ (e+f x)}}\right.$$

$$\left.(e+f x)\ \text{EllipticPi}\left[\frac{f\ (b g-a h)}{(b e-a f)\ h},\text{ArcSin}\left[\frac{\sqrt{b e-a f}\ \sqrt{g+h x}}{\sqrt{b g-a h}\ \sqrt{e+f x}}\right],\frac{(d e-c f)\ (b g-a h)}{(b e-a f)\ (d g-c h)}\right]\right)\Bigg/$$

$$\left(d f^2\sqrt{b e-a f}\ h^2\sqrt{a+b x}\ \sqrt{c+d x}\right)-\left(2\sqrt{b c-a d}\ \sqrt{-d g+c h}\ (a+b x)\right.$$

$$\sqrt{\frac{(b g-a h)\ (c+d x)}{(d g-c h)\ (a+b x)}}\ \sqrt{\frac{(b g-a h)\ (e+f x)}{(f g-e h)\ (a+b x)}}\ \text{EllipticPi}\left[-\frac{b\ (d g-c h)}{(b c-a d)\ h},\right.$$

$$\left.\left.\text{ArcSin}\left[\frac{\sqrt{b c-a d}\ \sqrt{g+h x}}{\sqrt{-d g+c h}\ \sqrt{a+b x}}\right],\frac{(b e-a f)\ (d g-c h)}{(b c-a d)\ (f g-e h)}\right]\right)\Bigg/\left(d h\sqrt{c+d x}\ \sqrt{e+f x}\right)$$

Result (type 4, 6638 leaves):

$$-\frac{1}{d^2}2\left(-\left(\left(\left(b\ (c+d x)^{3/2}\left(f+\frac{d e}{c+d x}-\frac{c f}{c+d x}\right)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)\sqrt{a+\frac{(c+d x)\left(b-\frac{b c}{c+d x}\right)}{d}}\right)\Bigg/\right.\right.\right.$$

$$\left(2 f h \sqrt{e+\frac{(c+d x)\left(f-\frac{c f}{c+d x}\right)}{d}} \sqrt{g+\frac{(c+d x)\left(h-\frac{c h}{c+d x}\right)}{d}}\right)\Bigg)+$$

$$\Bigg(d\,(b g-a h)\,(d g-c h)\,(b f g+b e h-2 a f h)\,\sqrt{c+d x}$$

$$\sqrt{\left(\left(b-\frac{b c}{c+d x}+\frac{a d}{c+d x}\right)\left(f+\frac{d e}{c+d x}-\frac{c f}{c+d x}\right)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)\right)}$$

$$\sqrt{a+\frac{(c+d x)\left(b-\frac{b c}{c+d x}\right)}{d}}\ \Bigg(\Bigg(d e \sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}$$

$$\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}$$

$$\Bigg(\Bigg((-b d g+a d h)\ \text{EllipticE}\Big[\text{ArcSin}\Big[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\Big],$$

$$\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\Big]\Bigg)\Big/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d} b\ \text{EllipticF}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\Big],\ \frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)-$$

$$\Bigg(c f \sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}$$

$$\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}$$

$$\left(\left((-b d g+a d h)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)+$$

$$\left(f\sqrt{\frac{-\frac{b}{b c-a d}+\frac{1}{c+d x}}{-\frac{b}{b c-a d}+\frac{h}{-d g+c h}}}\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\left(-\frac{h}{-d g+c h}+\frac{1}{c+d x}\right)\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)\left(-h-\frac{d g}{c+d x}+\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/$$

$$\left.\left.\left(\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)\right)\right)\Big/$$

$$\left(2 f h^2(f g-e h)\left(b-\frac{b c}{c+d x}+\frac{a d}{c+d x}\right)\sqrt{e+\frac{(c+d x)\left(f-\frac{c f}{c+d x}\right)}{d}}\right.$$

$$\left.\sqrt{g+\frac{(c+d x)\left(h-\frac{c h}{c+d x}\right)}{d}}\right)-$$

$$\Bigg(d(b e-a f)(d e-c f)(b f g+b e h-2 a f h)\sqrt{c+d x}$$

$$\sqrt{\left(\left(b-\frac{b c}{c+d x}+\frac{a d}{c+d x}\right)\left(f+\frac{d e}{c+d x}-\frac{c f}{c+d x}\right)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)\right)}$$

$$\sqrt{a+\frac{(c+d x)\left(b-\frac{b c}{c+d x}\right)}{d}}$$

$$\left(\left(d g \sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}\right.\right.$$

$$\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}$$

$$\left(\left((-b d g+a d h)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\bigg/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\right)\bigg/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)-$$

$$\left(c h \sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}\right.$$

$$\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}$$

$$\left(\left((-b d g+a d h)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\bigg/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d}b\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\sqrt{\frac{(d e - c f)\left(h + \frac{d g}{c+d x} - \frac{c h}{c+d x}\right)}{d(-f g + e h)}}\right], \frac{(b c - a d)(-f g + e h)}{(-d e + c f)(-b g + a h)}\right]\Bigg)\Bigg) \Bigg/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f} + \frac{1}{c+d x}}{-\frac{f}{-d e+c f} + \frac{h}{-d g+c h}}}\sqrt{\left(b + \frac{-b c + a d}{c + d x}\right)\left(f + \frac{d e - c f}{c + d x}\right)\left(h + \frac{d g - c h}{c + d x}\right)}\right) +$$

$$\left(h\sqrt{\frac{-\frac{b}{b c-a d} + \frac{1}{c+d x}}{-\frac{b}{b c-a d} + \frac{h}{-d g+c h}}}\sqrt{\frac{-\frac{f}{-d e+c f} + \frac{1}{c+d x}}{-\frac{f}{-d e+c f} + \frac{h}{-d g+c h}}}\left(-\frac{h}{-d g + c h} + \frac{1}{c + d x}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e + c f)\left(-h - \frac{d g}{c+d x} + \frac{c h}{c+d x}\right)}{d(-f g + e h)}}\right], \frac{(b c - a d)(-f g + e h)}{(-d e + c f)(-b g + a h)}\right]\Bigg) \Bigg/$$

$$\left(\sqrt{\frac{-\frac{h}{-d g+c h} + \frac{1}{c+d x}}{\frac{f}{-d e+c f} - \frac{h}{-d g+c h}}}\sqrt{\left(b + \frac{-b c + a d}{c + d x}\right)\left(f + \frac{d e - c f}{c + d x}\right)\left(h + \frac{d g - c h}{c + d x}\right)}\right)\Bigg)\Bigg)\Bigg) \Bigg/$$

$$\left(2 f^2 h (f g - e h)\left(b - \frac{b c}{c + d x} + \frac{a d}{c + d x}\right)\sqrt{e + \frac{(c + d x)\left(f - \frac{c f}{c+d x}\right)}{d}}\right.$$

$$\left.\sqrt{g + \frac{(c + d x)\left(h - \frac{c h}{c+d x}\right)}{d}}\right) -$$

$$\frac{1}{2 f^2 h^2\left(b - \frac{b c}{c+d x} + \frac{a d}{c+d x}\right)\sqrt{e + \frac{(c+d x)\left(f - \frac{c f}{c+d x}\right)}{d}}\sqrt{g + \frac{(c+d x)\left(h - \frac{c h}{c+d x}\right)}{d}}}$$

$$b$$
$$(b d f g + b d e h + b c f h - 3 a d f h)$$
$$\sqrt{c + d x}$$
$$\sqrt{\left(\left(b - \frac{b c}{c + d x} + \frac{a d}{c + d x}\right)\left(f + \frac{d e}{c + d x} - \frac{c f}{c + d x}\right)\left(h + \frac{d g}{c + d x} - \frac{c h}{c + d x}\right)\right)}$$
$$\sqrt{a + \frac{(c + d x)\left(b - \frac{b c}{c+d x}\right)}{d}}$$
$$\left(\left(d^2 e g\sqrt{-\frac{(b c - a d)(-d g + c h)\left(-\frac{b}{b c-a d} + \frac{1}{c+d x}\right)}{-b d g + a d h}}\right.\right.$$

$$\left(-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}\right)\sqrt{\frac{-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}}{\frac{f}{-d\,e+c\,f}-\frac{h}{-d\,g+c\,h}}}$$

$$\left(\left(\left(-b\,d\,g+a\,d\,h\right)\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{\left(d\,e-c\,f\right)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\left(-f\,g+e\,h\right)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{\left(b\,c-a\,d\right)\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\left(-b\,g+a\,h\right)}\right]\right)\Big/\left(\left(b\,c-a\,d\right)\left(-d\,g+c\,h\right)\right)-\frac{1}{b\,c-a\,d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(d\,e-c\,f\right)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\left(-f\,g+e\,h\right)}}\right],\frac{\left(b\,c-a\,d\right)\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\left(-b\,g+a\,h\right)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}}{-\frac{f}{-d\,e+c\,f}+\frac{h}{-d\,g+c\,h}}}\sqrt{\left(b+\frac{-b\,c+a\,d}{c+d\,x}\right)\left(f+\frac{d\,e-c\,f}{c+d\,x}\right)\left(h+\frac{d\,g-c\,h}{c+d\,x}\right)}\right)-$$

$$\left(c\,d\,f\,g\sqrt{-\frac{\left(b\,c-a\,d\right)\left(-d\,g+c\,h\right)\left(-\frac{b}{b\,c-a\,d}+\frac{1}{c+d\,x}\right)}{-b\,d\,g+a\,d\,h}}\right.$$

$$\left(-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}\right)\sqrt{\frac{-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}}{\frac{f}{-d\,e+c\,f}-\frac{h}{-d\,g+c\,h}}}$$

$$\left(\left(\left(-b\,d\,g+a\,d\,h\right)\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{\left(d\,e-c\,f\right)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\left(-f\,g+e\,h\right)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{\left(b\,c-a\,d\right)\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\left(-b\,g+a\,h\right)}\right]\right)\Big/\left(\left(b\,c-a\,d\right)\left(-d\,g+c\,h\right)\right)-\frac{1}{b\,c-a\,d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(d\,e-c\,f\right)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\left(-f\,g+e\,h\right)}}\right],\frac{\left(b\,c-a\,d\right)\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\left(-b\,g+a\,h\right)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}}{-\frac{f}{-d\,e+c\,f}+\frac{h}{-d\,g+c\,h}}}\sqrt{\left(b+\frac{-b\,c+a\,d}{c+d\,x}\right)\left(f+\frac{d\,e-c\,f}{c+d\,x}\right)\left(h+\frac{d\,g-c\,h}{c+d\,x}\right)}\right)-$$

$$\left(c\,d\,e\,h\sqrt{-\frac{(b\,c-a\,d)\,(-d\,g+c\,h)\left(-\frac{b}{b\,c-a\,d}+\frac{1}{c+d\,x}\right)}{-b\,d\,g+a\,d\,h}}\right.$$

$$\left(-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}\right)\sqrt{\frac{-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}}{\frac{f}{-d\,e+c\,f}-\frac{h}{-d\,g+c\,h}}}$$

$$\left(\left(\left(-b\,d\,g+a\,d\,h\right)\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\,(-f\,g+e\,h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b\,c-a\,d)\,(-f\,g+e\,h)}{(-d\,e+c\,f)\,(-b\,g+a\,h)}\right]\right)\Big/\left((b\,c-a\,d)\,(-d\,g+c\,h)\right)-\frac{1}{b\,c-a\,d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\,(-f\,g+e\,h)}}\right],\frac{(b\,c-a\,d)\,(-f\,g+e\,h)}{(-d\,e+c\,f)\,(-b\,g+a\,h)}\right]\right)\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}}{-\frac{f}{-d\,e+c\,f}+\frac{h}{-d\,g+c\,h}}}\sqrt{\left(b+\frac{-b\,c+a\,d}{c+d\,x}\right)\left(f+\frac{d\,e-c\,f}{c+d\,x}\right)\left(h+\frac{d\,g-c\,h}{c+d\,x}\right)}\right)+$$

$$\left(c^2\,f\,h\sqrt{-\frac{(b\,c-a\,d)\,(-d\,g+c\,h)\left(-\frac{b}{b\,c-a\,d}+\frac{1}{c+d\,x}\right)}{-b\,d\,g+a\,d\,h}}\right.$$

$$\left(-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}\right)\sqrt{\frac{-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}}{\frac{f}{-d\,e+c\,f}-\frac{h}{-d\,g+c\,h}}}$$

$$\left(\left(\left(-b\,d\,g+a\,d\,h\right)\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\,(-f\,g+e\,h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b\,c-a\,d)\,(-f\,g+e\,h)}{(-d\,e+c\,f)\,(-b\,g+a\,h)}\right]\right)\Big/\left((b\,c-a\,d)\,(-d\,g+c\,h)\right)-\frac{1}{b\,c-a\,d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d\,e-c\,f)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\,(-f\,g+e\,h)}}\right],\frac{(b\,c-a\,d)\,(-f\,g+e\,h)}{(-d\,e+c\,f)\,(-b\,g+a\,h)}\right]\right)\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\ \sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)+$$

$$\left(d f g\sqrt{\frac{-\frac{b}{b c-a d}+\frac{1}{c+d x}}{-\frac{b}{b c-a d}+\frac{h}{-d g+c h}}}\ \sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\ \left(-\frac{h}{-d g+c h}+\frac{1}{c+d x}\right)\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)\left(-h-\frac{d g}{c+d x}+\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\ \sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)+$$

$$\left(d e h\sqrt{\frac{-\frac{b}{b c-a d}+\frac{1}{c+d x}}{-\frac{b}{b c-a d}+\frac{h}{-d g+c h}}}\ \sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\ \left(-\frac{h}{-d g+c h}+\frac{1}{c+d x}\right)\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)\left(-h-\frac{d g}{c+d x}+\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\ \sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)-$$

$$\left(2 c f h\sqrt{\frac{-\frac{b}{b c-a d}+\frac{1}{c+d x}}{-\frac{b}{b c-a d}+\frac{h}{-d g+c h}}}\ \sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\ \left(-\frac{h}{-d g+c h}+\frac{1}{c+d x}\right)\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)\left(-h-\frac{d g}{c+d x}+\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\ \sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)-$$

$$\left(f(-d g+c h)\left(-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}\right)\sqrt{\frac{-\frac{b}{b c-a d}+\frac{1}{c+d x}}{-\frac{b}{b c-a d}+\frac{h}{-d g+c h}}}\right.$$

$$\sqrt{-\frac{\left(-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}\right)\left(-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}\right)}{\left(-\frac{f}{-d\,e+c\,f}+\frac{h}{-d\,g+c\,h}\right)^2}}\ \text{EllipticPi}\left[-\frac{-d\,f\,g+d\,e\,h}{(-d\,e+c\,f)\,h},\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(-d\,e+c\,f)\left(-h-\frac{d\,g}{c+d\,x}+\frac{c\,h}{c+d\,x}\right)}{d\,(-f\,g+e\,h)}}\right],\frac{(b\,c-a\,d)\,(-f\,g+e\,h)}{(-d\,e+c\,f)\,(-b\,g+a\,h)}\right]\right)\Big/$$

$$\left(\sqrt{\left(b+\frac{-b\,c+a\,d}{c+d\,x}\right)\left(f+\frac{d\,e-c\,f}{c+d\,x}\right)\left(h+\frac{d\,g-c\,h}{c+d\,x}\right)}\right)\Bigg)\Bigg)$$

Problem 108: Result more than twice size of optimal antiderivative.

$$\int\frac{\sqrt{a+b\,x}}{\sqrt{c+d\,x}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}}\,dx$$

Optimal (type 4, 228 leaves, 2 steps):

$$\left(2\sqrt{-d\,g+c\,h}\,(a+b\,x)\sqrt{\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}}\sqrt{\frac{(b\,g-a\,h)\,(e+f\,x)}{(f\,g-e\,h)\,(a+b\,x)}}\right.$$

$$\left.\text{EllipticPi}\left[-\frac{b\,(d\,g-c\,h)}{(b\,c-a\,d)\,h},\text{ArcSin}\left[\frac{\sqrt{b\,c-a\,d}\,\sqrt{g+h\,x}}{\sqrt{-d\,g+c\,h}\,\sqrt{a+b\,x}}\right],\frac{(b\,e-a\,f)\,(d\,g-c\,h)}{(b\,c-a\,d)\,(f\,g-e\,h)}\right]\right)\Big/$$

$$\left(\sqrt{b\,c-a\,d}\,h\sqrt{c+d\,x}\,\sqrt{e+f\,x}\right)$$

Result (type 4, 584 leaves):

$$-\left(\left(2\sqrt{\frac{(d g-c h)(a+b x)}{(b g-a h)(c+d x)}}\,(c+d x)^{3/2}\right.\right.$$

$$\left(\left(a d\sqrt{\frac{(d g-c h)(e+f x)}{(f g-e h)(c+d x)}}\,(g+h x)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)(g+h x)}{(f g-e h)(c+d x)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(d e-c f)(b g-a h)}\right]\right)\Bigg/\left((d g-c h)(c+d x)\sqrt{\frac{(-d e+c f)(g+h x)}{(f g-e h)(c+d x)}}\right)+$$

$$\left(b c\sqrt{\frac{(d g-c h)(e+f x)}{(f g-e h)(c+d x)}}\,(g+h x)\,\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)(g+h x)}{(f g-e h)(c+d x)}}\right],\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(d e-c f)(b g-a h)}\right]\right)\Bigg/\left((-d g+c h)(c+d x)\sqrt{\frac{(-d e+c f)(g+h x)}{(f g-e h)(c+d x)}}\right)+$$

$$\frac{1}{(d e-c f)\,h}b\,(f g-e h)\sqrt{-\frac{(d e-c f)(d g-c h)(e+f x)(g+h x)}{(f g-e h)^2(c+d x)^2}}$$

$$\text{EllipticPi}\left[\frac{d(-f g+e h)}{(d e-c f)\,h},\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)(g+h x)}{(f g-e h)(c+d x)}}\right],\right.$$

$$\left.\left.\left.\frac{(b c-a d)(-f g+e h)}{(d e-c f)(b g-a h)}\right]\right)\right)\Bigg/\left(d\sqrt{a+b x}\,\sqrt{e+f x}\,\sqrt{g+h x}\right)\Bigg)$$

Problem 110: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{(a+b x)^{3/2}\sqrt{c+d x}\,\sqrt{e+f x}\,\sqrt{g+h x}}\,dx$$

Optimal (type 4, 429 leaves, 5 steps):

$$-\left(\left(2\,b\,\sqrt{f\,g-e\,h}\,\sqrt{c+d\,x}\,\sqrt{-\frac{(b\,e-a\,f)\,(g+h\,x)}{(f\,g-e\,h)\,(a+b\,x)}}\right.\right.$$

$$\left.\text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{b\,g-a\,h}\,\sqrt{e+f\,x}}{\sqrt{f\,g-e\,h}\,\sqrt{a+b\,x}}\right],\,-\frac{(b\,c-a\,d)\,(f\,g-e\,h)}{(d\,e-c\,f)\,(b\,g-a\,h)}\right]\right)\Big/$$

$$\left.\left((b\,c-a\,d)\,(b\,e-a\,f)\,\sqrt{b\,g-a\,h}\,\sqrt{\frac{(b\,e-a\,f)\,(c+d\,x)}{(d\,e-c\,f)\,(a+b\,x)}}\,\sqrt{g+h\,x}\right)\right)-$$

$$\left(2\,d\,\sqrt{\frac{(b\,e-a\,f)\,(c+d\,x)}{(d\,e-c\,f)\,(a+b\,x)}}\,\sqrt{g+h\,x}\,\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{b\,g-a\,h}\,\sqrt{e+f\,x}}{\sqrt{f\,g-e\,h}\,\sqrt{a+b\,x}}\right],\right.\right.$$

$$\left.\left.-\frac{(b\,c-a\,d)\,(f\,g-e\,h)}{(d\,e-c\,f)\,(b\,g-a\,h)}\right]\right)\Big/$$

$$\left((b\,c-a\,d)\,\sqrt{b\,g-a\,h}\,\sqrt{f\,g-e\,h}\,\sqrt{c+d\,x}\,\sqrt{-\frac{(b\,e-a\,f)\,(g+h\,x)}{(f\,g-e\,h)\,(a+b\,x)}}\right)$$

Result (type 4, 3247 leaves):

$$-\frac{2\,b^2\,\sqrt{c+d\,x}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}}{(b\,c-a\,d)\,(b\,e-a\,f)\,(b\,g-a\,h)\,\sqrt{a+b\,x}}-\frac{1}{d\,(b\,c-a\,d)\,(b\,e-a\,f)\,(b\,g-a\,h)}$$

$$2\left(-\left(\left(b\,(c+d\,x)^{3/2}\left(f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}\right)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)\sqrt{a+\frac{(c+d\,x)\left(b-\frac{b\,c}{c+d\,x}\right)}{d}}\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{e+\frac{(c+d\,x)\left(f-\frac{c\,f}{c+d\,x}\right)}{d}}\,\sqrt{g+\frac{(c+d\,x)\left(h-\frac{c\,h}{c+d\,x}\right)}{d}}\right)\right)+$$

$$\left(1\Big/\left((f\,g-e\,h)\left(b-\frac{b\,c}{c+d\,x}+\frac{a\,d}{c+d\,x}\right)\sqrt{e+\frac{(c+d\,x)\left(f-\frac{c\,f}{c+d\,x}\right)}{d}}\,\sqrt{g+\frac{(c+d\,x)\left(h-\frac{c\,h}{c+d\,x}\right)}{d}}\right)\right)$$

$$(b\,c-a\,d)\,f\,(b\,g-a\,h)\,(-d\,g+c\,h)\,\sqrt{c+d\,x}\,\sqrt{\left(\left(b-\frac{b\,c}{c+d\,x}+\frac{a\,d}{c+d\,x}\right)\right.}$$

$$\left.\left.\left(f+\frac{d\,e}{c+d\,x}-\frac{c\,f}{c+d\,x}\right)\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)\right)\right)\sqrt{a+\frac{(c+d\,x)\left(b-\frac{b\,c}{c+d\,x}\right)}{d}}$$

$$\left(\left(d e \sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\right.\right.$$

$$\left(\left((-b d g+a d h)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)-\left(c f\right.$$

$$\sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}$$

$$\left(\left((-b d g+a d h)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\right.\right.\right.$$

$$\left.\left.\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Big/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d}b\,\text{EllipticF}\Big[$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)+$$

$$\left(f\sqrt{\frac{-\frac{b}{b c-a d}+\frac{1}{c+d x}}{-\frac{b}{b c-a d}+\frac{h}{-d g+c h}}}\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\left(-\frac{h}{-d g+c h}+\frac{1}{c+d x}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-d e+c f)\left(-h-\frac{d g}{c+d x}+\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\Bigg/$$

$$\left(\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)\right)-$$

$$\left(1\Bigg/\left((f g-e h)\left(b-\frac{b c}{c+d x}+\frac{a d}{c+d x}\right)\sqrt{e+\frac{(c+d x)\left(f-\frac{c f}{c+d x}\right)}{d}}\sqrt{g+\frac{(c+d x)\left(h-\frac{c h}{c+d x}\right)}{d}}\right)\right)$$

$$(b c-a d)(b e-a f)(-d e+c f)\,h\sqrt{c+d x}$$

$$\sqrt{\left(\left(b-\frac{b c}{c+d x}+\frac{a d}{c+d x}\right)\left(f+\frac{d e}{c+d x}-\frac{c f}{c+d x}\right)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)\right)}$$

$$\sqrt{a+\frac{(c+d x)\left(b-\frac{b c}{c+d x}\right)}{d}}$$

$$\left(\left(d g\sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}\right.\right.$$

$$\left(\left((-b d g+a d h)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\right.\right.\right.$$

$$\left.\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\right]\right)\Bigg/\left((b c-a d)(-d g+c h)\right)-\frac{1}{b c-a d}b\,\text{EllipticF}\Big[$$

$$\text{ArcSin}\left[\sqrt{\frac{(d e-c f)\left(h+\frac{d g}{c+d x}-\frac{c h}{c+d x}\right)}{d(-f g+e h)}}\right],\frac{(b c-a d)(-f g+e h)}{(-d e+c f)(-b g+a h)}\Big]\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{-\frac{f}{-d e+c f}+\frac{1}{c+d x}}{-\frac{f}{-d e+c f}+\frac{h}{-d g+c h}}}\sqrt{\left(b+\frac{-b c+a d}{c+d x}\right)\left(f+\frac{d e-c f}{c+d x}\right)\left(h+\frac{d g-c h}{c+d x}\right)}\right)-\Bigg(c h$$

$$\sqrt{-\frac{(b c-a d)(-d g+c h)\left(-\frac{b}{b c-a d}+\frac{1}{c+d x}\right)}{-b d g+a d h}}\left(-\frac{f}{-d e+c f}+\frac{1}{c+d x}\right)\sqrt{\frac{-\frac{h}{-d g+c h}+\frac{1}{c+d x}}{\frac{f}{-d e+c f}-\frac{h}{-d g+c h}}}$$

$$\left(\left(\left(-b\,d\,g+a\,d\,h\right)\,\text{EllipticE}\left[\text{ArcSin}\left[\sqrt{\frac{\left(d\,e-c\,f\right)\,\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\,\left(-f\,g+e\,h\right)}}\,\right],\right.\right.\right.$$

$$\left.\left.\frac{\left(b\,c-a\,d\right)\,\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\,\left(-b\,g+a\,h\right)}\right]\right)\Big/\left(\left(b\,c-a\,d\right)\,\left(-d\,g+c\,h\right)\right)-\frac{1}{b\,c-a\,d}b\,\text{EllipticF}\left[\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{\left(d\,e-c\,f\right)\,\left(h+\frac{d\,g}{c+d\,x}-\frac{c\,h}{c+d\,x}\right)}{d\,\left(-f\,g+e\,h\right)}}\,\right],\frac{\left(b\,c-a\,d\right)\,\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\,\left(-b\,g+a\,h\right)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}}{-\frac{f}{-d\,e+c\,f}+\frac{h}{-d\,g+c\,h}}}\,\sqrt{\left(b+\frac{-b\,c+a\,d}{c+d\,x}\right)\,\left(f+\frac{d\,e-c\,f}{c+d\,x}\right)\,\left(h+\frac{d\,g-c\,h}{c+d\,x}\right)}\right)+$$

$$\left(h\,\sqrt{\frac{-\frac{b}{b\,c-a\,d}+\frac{1}{c+d\,x}}{-\frac{b}{b\,c-a\,d}+\frac{h}{-d\,g+c\,h}}}\,\sqrt{\frac{-\frac{f}{-d\,e+c\,f}+\frac{1}{c+d\,x}}{-\frac{f}{-d\,e+c\,f}+\frac{h}{-d\,g+c\,h}}}\,\left(-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}\right)\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{\left(-d\,e+c\,f\right)\,\left(-h-\frac{d\,g}{c+d\,x}+\frac{c\,h}{c+d\,x}\right)}{d\,\left(-f\,g+e\,h\right)}}\,\right],\frac{\left(b\,c-a\,d\right)\,\left(-f\,g+e\,h\right)}{\left(-d\,e+c\,f\right)\,\left(-b\,g+a\,h\right)}\right]\right)\Big/$$

$$\left.\left.\left(\sqrt{\frac{-\frac{h}{-d\,g+c\,h}+\frac{1}{c+d\,x}}{\frac{f}{-d\,e+c\,f}-\frac{h}{-d\,g+c\,h}}}\,\sqrt{\left(b+\frac{-b\,c+a\,d}{c+d\,x}\right)\,\left(f+\frac{d\,e-c\,f}{c+d\,x}\right)\,\left(h+\frac{d\,g-c\,h}{c+d\,x}\right)}\right)\right)\right)$$

Problem 111: Result more than twice size of optimal antiderivative.

$$\int\frac{1}{\left(a+b\,x\right)^{3/2}\,\left(c+d\,x\right)^{3/2}\,\sqrt{e+f\,x}\,\sqrt{g+h\,x}}\,dx$$

Optimal (type 4, 786 leaves, ? steps):

$$-\frac{2 d^3 \sqrt{a+b x} \sqrt{e+f x} \sqrt{g+h x}}{(b c-a d)^2 (d e-c f) (d g-c h) \sqrt{c+d x}}-\frac{2 b^3 \sqrt{c+d x} \sqrt{e+f x} \sqrt{g+h x}}{(b c-a d)^2 (b e-a f) (b g-a h) \sqrt{a+b x}}+$$
$$\left(2 b \left(a^2 d^2 f h-a b d^2 (f g+e h)+b^2 \left(2 d^2 e g+c^2 f h-c d (f g+e h)\right)\right) \sqrt{c+d x} \sqrt{e+f x} \sqrt{g+h x}\right) \Big/$$
$$\left((b c-a d)^2 (b e-a f) (d e-c f) (b g-a h) (d g-c h) \sqrt{a+b x}\right)-$$
$$\left(2 \sqrt{f g-e h} \left(a^2 d^2 f h-a b d^2 (f g+e h)+b^2 \left(2 d^2 e g+c^2 f h-c d (f g+e h)\right)\right) \sqrt{c+d x}\right.$$
$$\left.\sqrt{-\frac{(b e-a f) (g+h x)}{(f g-e h) (a+b x)}} \text{EllipticE}\left[\text{ArcSin}\left[\frac{\sqrt{b g-a h} \sqrt{e+f x}}{\sqrt{f g-e h} \sqrt{a+b x}}\right],-\frac{(b c-a d) (f g-e h)}{(d e-c f) (b g-a h)}\right]\right) \Big/$$
$$\left((b c-a d)^2 (b e-a f) (d e-c f) \sqrt{b g-a h} (d g-c h) \sqrt{\frac{(b e-a f) (c+d x)}{(d e-c f) (a+b x)}} \sqrt{g+h x}\right)-$$
$$\left(4 b d \sqrt{\frac{(b e-a f) (c+d x)}{(d e-c f) (a+b x)}} \sqrt{g+h x}\right.$$
$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\frac{\sqrt{b g-a h} \sqrt{e+f x}}{\sqrt{f g-e h} \sqrt{a+b x}}\right],-\frac{(b c-a d) (f g-e h)}{(d e-c f) (b g-a h)}\right]\right) \Big/$$
$$\left((b c-a d)^2 \sqrt{b g-a h} \sqrt{f g-e h} \sqrt{c+d x} \sqrt{-\frac{(b e-a f) (g+h x)}{(f g-e h) (a+b x)}}\right)$$

Result (type 4, 7061 leaves):

$$\sqrt{a+b x} \sqrt{c+d x} \sqrt{e+f x} \sqrt{g+h x}$$
$$\left(\frac{1}{\left(c-\frac{a d}{b}\right) (a+b x)} \left(-\frac{2 b^3 c d^2 e g}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}-\right.\right.$$
$$\frac{2 a b^2 d^3 e g}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}+$$
$$\frac{2 b^3 c^2 d f g}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}+$$
$$\frac{2 a^2 b d^3 f g}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}+$$
$$\frac{2 b^3 c^2 d e h}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}+$$
$$\frac{2 a^2 b d^3 e h}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}-$$
$$\frac{2 b^3 c^3 f h}{(b c-a d)^2 (b e-a f) (-d e+c f) (b g-a h) (-d g+c h)}-$$

$$\frac{2\,a^3\,d^3\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-\frac{1}{b}$$

$$a\,\Bigg(-\frac{4\,b^3\,d^3\,e\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,b^3\,c\,d^2\,f\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,a\,b^2\,d^3\,f\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,b^3\,c\,d^2\,e\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,a\,b^2\,d^3\,e\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\frac{2\,b^3\,c^2\,d\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\frac{2\,a^2\,b\,d^3\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}\Bigg)\Bigg)+$$

$$\frac{1}{\left(a-\frac{b\,c}{d}\right)\,(c+d\,x)}\,\Bigg(-\frac{2\,b^3\,c\,d^2\,e\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\frac{2\,a\,b^2\,d^3\,e\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,b^3\,c^2\,d\,f\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,a^2\,b\,d^3\,f\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,b^3\,c^2\,d\,e\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,a^2\,b\,d^3\,e\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\frac{2\,b^3\,c^3\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\frac{2\,a^3\,d^3\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-\frac{1}{d}$$

$$c\,\Bigg(-\frac{4\,b^3\,d^3\,e\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,b^3\,c\,d^2\,f\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,a\,b^2\,d^3\,f\,g}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,b^3\,c\,d^2\,e\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}+$$

$$\frac{2\,a\,b^2\,d^3\,e\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\frac{2\,b^3\,c^2\,d\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}-$$

$$\left.\left.\left.\frac{2\,a^2\,b\,d^3\,f\,h}{(b\,c-a\,d)^2\,(b\,e-a\,f)\,(-d\,e+c\,f)\,(b\,g-a\,h)\,(-d\,g+c\,h)}\right)\right)\right)-$$

$$\frac{1}{b^2\,(-b\,c+a\,d)^2\,(-b\,e+a\,f)\,(-d\,e+c\,f)\,(-b\,g+a\,h)\,(-d\,g+c\,h)}$$

$$2\left(\left((-2\,b^2\,d^2\,e\,g+b^2\,c\,d\,f\,g+a\,b\,d^2\,f\,g+b^2\,c\,d\,e\,h+a\,b\,d^2\,e\,h-b^2\,c^2\,f\,h-a^2\,d^2\,f\,h)\right.\right.$$

$$(a+b\,x)^{5/2}\left(d+\frac{b\,c}{a+b\,x}-\frac{a\,d}{a+b\,x}\right)\left(f+\frac{b\,e}{a+b\,x}-\frac{a\,f}{a+b\,x}\right)\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)\Bigg)\Bigg/$$

$$\left(\sqrt{c+\frac{(a+b\,x)\left(d-\frac{a\,d}{a+b\,x}\right)}{b}}\,\sqrt{e+\frac{(a+b\,x)\left(f-\frac{a\,f}{a+b\,x}\right)}{b}}\,\sqrt{g+\frac{(a+b\,x)\left(h-\frac{a\,h}{a+b\,x}\right)}{b}}\right)+$$

$$\frac{1}{\sqrt{c+\frac{(a+b\,x)\left(d-\frac{a\,d}{a+b\,x}\right)}{b}}\,\sqrt{e+\frac{(a+b\,x)\left(f-\frac{a\,f}{a+b\,x}\right)}{b}}\,\sqrt{g+\frac{(a+b\,x)\left(h-\frac{a\,h}{a+b\,x}\right)}{b}}}$$

$$(b\,c-a\,d)\,(b\,e-a\,f)\,(b\,g-a\,h)\,(a+b\,x)^{3/2}$$

$$\sqrt{\left(\left(d+\frac{b\,c}{a+b\,x}-\frac{a\,d}{a+b\,x}\right)\left(f+\frac{b\,e}{a+b\,x}-\frac{a\,f}{a+b\,x}\right)\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)\right)}$$

$$\left(\left(2\,b^2\,d^2\,e\,g\,\sqrt{\frac{(b\,c-a\,d)\,(b\,g-a\,h)\left(-\frac{d}{-b\,c+a\,d}+\frac{1}{a+b\,x}\right)}{b\,d\,g-b\,c\,h}}\right.\right.$$

$$\left(-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}\right)\sqrt{\frac{-\frac{h}{-b\,g+a\,h}+\frac{1}{a+b\,x}}{\frac{f}{-b\,e+a\,f}-\frac{h}{-b\,g+a\,h}}}\left(-\left(\left((b\,d\,g-b\,c\,h)\,\text{EllipticE}\right[\right.\right.\right.$$

$$\text{ArcSin}\Big[\sqrt{\frac{(b\,e-a\,f)\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Big/$$

$$\Big((b\,c-a\,d)\,(b\,g-a\,h)\Big)\Bigg)-\frac{1}{-b\,c+a\,d}d\,\text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{(b\,e-a\,f)\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}}{-\frac{f}{-b\,e+a\,f}+\frac{h}{-b\,g+a\,h}}}\ \sqrt{\left(d+\frac{b\,c-a\,d}{a+b\,x}\right)\left(f+\frac{b\,e-a\,f}{a+b\,x}\right)\left(h+\frac{b\,g-a\,h}{a+b\,x}\right)}\right)-$$

$$\Bigg(b^2\,c\,d\,f\,g\sqrt{\frac{(b\,c-a\,d)\,(b\,g-a\,h)\left(-\frac{d}{-b\,c+a\,d}+\frac{1}{a+b\,x}\right)}{b\,d\,g-b\,c\,h}}\ \left(-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}\right)$$

$$\sqrt{\frac{-\frac{h}{-b\,g+a\,h}+\frac{1}{a+b\,x}}{\frac{f}{-b\,e+a\,f}-\frac{h}{-b\,g+a\,h}}}\ \Bigg(-\Bigg(\Bigg((b\,d\,g-b\,c\,h)\ \text{EllipticE}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(b\,e-a\,f)\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Big/$$

$$\Big((b\,c-a\,d)\,(b\,g-a\,h)\Big)\Bigg)-\frac{1}{-b\,c+a\,d}d\,\text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{(b\,e-a\,f)\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}}{-\frac{f}{-b\,e+a\,f}+\frac{h}{-b\,g+a\,h}}}\ \sqrt{\left(d+\frac{b\,c-a\,d}{a+b\,x}\right)\left(f+\frac{b\,e-a\,f}{a+b\,x}\right)\left(h+\frac{b\,g-a\,h}{a+b\,x}\right)}\right)-$$

$$\Bigg(a\,b\,d^2\,f\,g\sqrt{\frac{(b\,c-a\,d)\,(b\,g-a\,h)\left(-\frac{d}{-b\,c+a\,d}+\frac{1}{a+b\,x}\right)}{b\,d\,g-b\,c\,h}}\ \left(-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}\right)$$

$$\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\ \Bigg(-\Bigg(\Bigg(\Bigg((b d g-b c h)\ \text{EllipticE}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(b e-a f)\left(h+\frac{b g}{a+b x}-\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\Big],\ \frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\Big]\Bigg)\Bigg/$$

$$((b c-a d)(b g-a h))\Bigg)-\frac{1}{-b c+a d}d\ \text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{(b e-a f)\left(h+\frac{b g}{a+b x}-\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\Big],\ \frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\Big]\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\ \sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right)-$$

$$\Bigg(b^2 c d e h\sqrt{\frac{(b c-a d)(b g-a h)\left(-\frac{d}{-b c+a d}+\frac{1}{a+b x}\right)}{b d g-b c h}}\ \left(-\frac{f}{-b e+a f}+\frac{1}{a+b x}\right)$$

$$\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\ \Bigg(-\Bigg(\Bigg(\Bigg((b d g-b c h)\ \text{EllipticE}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(b e-a f)\left(h+\frac{b g}{a+b x}-\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\Big],\ \frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\Big]\Bigg)\Bigg/$$

$$((b c-a d)(b g-a h))\Bigg)-\frac{1}{-b c+a d}d\ \text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{(b e-a f)\left(h+\frac{b g}{a+b x}-\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\Big],\ \frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\Big]\Bigg)\Bigg/$$

$$\left(\sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\ \sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right)-$$

$$\Bigg(a\,b\,d^2\,e\,h\,\sqrt{\frac{(b\,c-a\,d)\,(b\,g-a\,h)\,\left(-\frac{d}{-b\,c+a\,d}+\frac{1}{a+b\,x}\right)}{b\,d\,g-b\,c\,h}}\,\left(-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}\right)$$

$$\sqrt{\frac{-\frac{h}{-b\,g+a\,h}+\frac{1}{a+b\,x}}{\frac{f}{-b\,e+a\,f}-\frac{h}{-b\,g+a\,h}}}\,\Bigg(-\Bigg(\Bigg((b\,d\,g-b\,c\,h)\,\text{EllipticE}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(b\,e-a\,f)\,\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Big/$$

$$((b\,c-a\,d)\,(b\,g-a\,h))\Bigg)-\frac{1}{-b\,c+a\,d}d\,\text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{(b\,e-a\,f)\,\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}}{-\frac{f}{-b\,e+a\,f}+\frac{h}{-b\,g+a\,h}}}\,\sqrt{\left(d+\frac{b\,c-a\,d}{a+b\,x}\right)\left(f+\frac{b\,e-a\,f}{a+b\,x}\right)\left(h+\frac{b\,g-a\,h}{a+b\,x}\right)}\right)+$$

$$\Bigg(b^2\,c^2\,f\,h\,\sqrt{\frac{(b\,c-a\,d)\,(b\,g-a\,h)\,\left(-\frac{d}{-b\,c+a\,d}+\frac{1}{a+b\,x}\right)}{b\,d\,g-b\,c\,h}}\,\left(-\frac{f}{-b\,e+a\,f}+\frac{1}{a+b\,x}\right)$$

$$\sqrt{\frac{-\frac{h}{-b\,g+a\,h}+\frac{1}{a+b\,x}}{\frac{f}{-b\,e+a\,f}-\frac{h}{-b\,g+a\,h}}}\,\Bigg(-\Bigg(\Bigg((b\,d\,g-b\,c\,h)\,\text{EllipticE}\Big[$$

$$\text{ArcSin}\Big[\sqrt{\frac{(b\,e-a\,f)\,\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Big/$$

$$((b\,c-a\,d)\,(b\,g-a\,h))\Bigg)-\frac{1}{-b\,c+a\,d}d\,\text{EllipticF}\Big[\text{ArcSin}\Big[$$

$$\sqrt{\frac{(b\,e-a\,f)\,\left(h+\frac{b\,g}{a+b\,x}-\frac{a\,h}{a+b\,x}\right)}{b\,(-f\,g+e\,h)}}\Big],\ \frac{(-b\,c+a\,d)\,(-f\,g+e\,h)}{(-b\,e+a\,f)\,(-d\,g+c\,h)}\Big]\Bigg)\Bigg)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right)+$$

$$\left(a^2 d^2 f h\sqrt{\frac{(b c-a d)(b g-a h)\left(-\frac{d}{-b c+a d}+\frac{1}{a+b x}\right)}{b d g-b c h}}\left(-\frac{f}{-b e+a f}+\frac{1}{a+b x}\right)\right.$$

$$\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\left(-\left(\left((b d g-b c h)\,\text{EllipticE}\left[\right.\right.\right.\right.$$

$$\left.\left.\text{ArcSin}\left[\sqrt{\frac{(b e-a f)\left(h+\frac{b g}{a+b x}-\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\right],\frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\right]\right)\Big/$$

$$\left.((b c-a d)(b g-a h))\right)-\frac{1}{-b c+a d}d\,\text{EllipticF}\left[\text{ArcSin}\left[\right.\right.$$

$$\left.\left.\left.\left.\sqrt{\frac{(b e-a f)\left(h+\frac{b g}{a+b x}-\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\right],\frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\right]\right)\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right)+$$

$$\left(b d^2 f g\sqrt{\frac{-\frac{d}{-b c+a d}+\frac{1}{a+b x}}{-\frac{d}{-b c+a d}+\frac{h}{-b g+a h}}}\sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\left(-\frac{h}{-b g+a h}+\frac{1}{a+b x}\right)\right.$$

$$\left.\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-b e+a f)\left(-h-\frac{b g}{a+b x}+\frac{a h}{a+b x}\right)}{b(-f g+e h)}}\right],\frac{(-b c+a d)(-f g+e h)}{(-b e+a f)(-d g+c h)}\right]\right)\Big/$$

$$\left(\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right)+$$

$$\left(b d^2 e h\sqrt{\frac{-\frac{d}{-b c+a d}+\frac{1}{a+b x}}{-\frac{d}{-b c+a d}+\frac{h}{-b g+a h}}}\sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\left(-\frac{h}{-b g+a h}+\frac{1}{a+b x}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-b e+a f)\left(-h-\frac{b g}{a+b x}+\frac{a h}{a+b x}\right)}{b\,(-f g+e h)}}\right], \frac{(-b c+a d)\,(-f g+e h)}{(-b e+a f)\,(-d g+c h)}\right] \Bigg/$$

$$\left(\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\ \sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right) -$$

$$\left(b c d f h\sqrt{\frac{-\frac{d}{-b c+a d}+\frac{1}{a+b x}}{-\frac{d}{-b c+a d}+\frac{h}{-b g+a h}}}\ \sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\ \left(-\frac{h}{-b g+a h}+\frac{1}{a+b x}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-b e+a f)\left(-h-\frac{b g}{a+b x}+\frac{a h}{a+b x}\right)}{b\,(-f g+e h)}}\right], \frac{(-b c+a d)\,(-f g+e h)}{(-b e+a f)\,(-d g+c h)}\right] \Bigg/$$

$$\left(\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\ \sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right) -$$

$$\left(a d^2 f h\sqrt{\frac{-\frac{d}{-b c+a d}+\frac{1}{a+b x}}{-\frac{d}{-b c+a d}+\frac{h}{-b g+a h}}}\ \sqrt{\frac{-\frac{f}{-b e+a f}+\frac{1}{a+b x}}{-\frac{f}{-b e+a f}+\frac{h}{-b g+a h}}}\ \left(-\frac{h}{-b g+a h}+\frac{1}{a+b x}\right)\right.$$

$$\text{EllipticF}\left[\text{ArcSin}\left[\sqrt{\frac{(-b e+a f)\left(-h-\frac{b g}{a+b x}+\frac{a h}{a+b x}\right)}{b\,(-f g+e h)}}\right], \frac{(-b c+a d)\,(-f g+e h)}{(-b e+a f)\,(-d g+c h)}\right] \Bigg/$$

$$\left.\left(\sqrt{\frac{-\frac{h}{-b g+a h}+\frac{1}{a+b x}}{\frac{f}{-b e+a f}-\frac{h}{-b g+a h}}}\ \sqrt{\left(d+\frac{b c-a d}{a+b x}\right)\left(f+\frac{b e-a f}{a+b x}\right)\left(h+\frac{b g-a h}{a+b x}\right)}\right)\right)\right)$$

Problem 112: Result unnecessarily involves higher level functions.

$$\int \frac{x^4\,(e+f x)^n}{(a+b x)\,(c+d x)}\,dx$$

Optimal (type 5, 319 leaves, 8 steps):

$$\frac{e^2 (e+f x)^{1+n}}{b d f^3 (1+n)}+\frac{(b c+a d) e (e+f x)^{1+n}}{b^2 d^2 f^2 (1+n)}+\frac{(b^2 c^2+a b c d+a^2 d^2) (e+f x)^{1+n}}{b^3 d^3 f (1+n)}-\frac{2 e (e+f x)^{2+n}}{b d f^3 (2+n)}-\frac{(b c+a d) (e+f x)^{2+n}}{b^2 d^2 f^2 (2+n)}+\frac{(e+f x)^{3+n}}{b d f^3 (3+n)}-\frac{a^4 (e+f x)^{1+n} \text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{b (e+f x)}{b e-a f}\right]}{b^3 (b c-a d) (b e-a f) (1+n)}+\frac{c^4 (e+f x)^{1+n} \text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{d (e+f x)}{d e-c f}\right]}{d^3 (b c-a d) (d e-c f) (1+n)}$$

Result (type 6, 262 leaves):

$$\frac{6}{5} e x^5 (e+f x)^n \left(\left(a b \text{AppellF1}\left[5,-n,1,6,-\frac{f x}{e},-\frac{b x}{a}\right]\right) \Big/ \left((b c-a d) (a+b x) \left(6 a e \text{AppellF1}\left[5,-n,1,6,-\frac{f x}{e},-\frac{b x}{a}\right]+a f n x \text{AppellF1}\left[6,1-n,1,7,-\frac{f x}{e},-\frac{b x}{a}\right]-b e x \text{AppellF1}\left[6,-n,2,7,-\frac{f x}{e},-\frac{b x}{a}\right]\right)\right)+\left(c d \text{AppellF1}\left[5,-n,1,6,-\frac{f x}{e},-\frac{d x}{c}\right]\right) \Big/ \left((-b c+a d) (c+d x) \left(6 c e \text{AppellF1}\left[5,-n,1,6,-\frac{f x}{e},-\frac{d x}{c}\right]+c f n x \text{AppellF1}\left[6,1-n,1,7,-\frac{f x}{e},-\frac{d x}{c}\right]-d e x \text{AppellF1}\left[6,-n,2,7,-\frac{f x}{e},-\frac{d x}{c}\right]\right)\right)\right)$$

Problem 113: Result unnecessarily involves higher level functions.

$$\int \frac{x^3 (e+f x)^n}{(a+b x) (c+d x)} \, dx$$

Optimal (type 5, 216 leaves, 6 steps):

$$-\frac{e (e+f x)^{1+n}}{b d f^2 (1+n)}-\frac{(b c+a d) (e+f x)^{1+n}}{b^2 d^2 f (1+n)}+\frac{(e+f x)^{2+n}}{b d f^2 (2+n)}+\frac{a^3 (e+f x)^{1+n} \text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{b (e+f x)}{b e-a f}\right]}{b^2 (b c-a d) (b e-a f) (1+n)}-\frac{c^3 (e+f x)^{1+n} \text{Hypergeometric2F1}\left[1,1+n,2+n,\frac{d (e+f x)}{d e-c f}\right]}{d^2 (b c-a d) (d e-c f) (1+n)}$$

Result (type 6, 262 leaves):

$$\frac{5}{4} e x^4 (e+f x)^n \left(\left(a b \text{AppellF1}\left[4,-n,1,5,-\frac{f x}{e},-\frac{b x}{a}\right]\right)\Big/\left((b c-a d) (a+b x) \left(5 a e \text{AppellF1}\left[4,-n,1,5,-\frac{f x}{e},-\frac{b x}{a}\right]+a f n x \text{AppellF1}\left[5,1-n,1,6,-\frac{f x}{e},-\frac{b x}{a}\right]-b e x \text{AppellF1}\left[5,-n,2,6,-\frac{f x}{e},-\frac{b x}{a}\right]\right)\right)+\left(c d \text{AppellF1}\left[4,-n,1,5,-\frac{f x}{e},-\frac{d x}{c}\right]\right)\Big/\left((-b c+a d) (c+d x) \left(5 c e \text{AppellF1}\left[4,-n,1,5,-\frac{f x}{e},-\frac{d x}{c}\right]+c f n x \text{AppellF1}\left[5,1-n,1,6,-\frac{f x}{e},-\frac{d x}{c}\right]-d e x \text{AppellF1}\left[5,-n,2,6,-\frac{f x}{e},-\frac{d x}{c}\right]\right)\right)\right)$$

Problem 120: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \frac{(a+b x)^m (c+d x) (e+f x)}{g+h x} \, dx$$

Optimal (type 5, 134 leaves, 2 steps):

$$-\left(\left((a+b x)^{1+m} (a d f h+b (d f g-d e h-c f h) (2+m)-b d f h (1+m) x)\right)\Big/\left(b^2 h^2 (1+m) (2+m)\right)\right)+\left((d g-c h) (f g-e h) (a+b x)^{1+m} \text{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{h (a+b x)}{b g-a h}\right]\right)\Big/\left(h^2 (b g-a h) (1+m)\right)$$

Result (type 6, 317 leaves):

$$\frac{1}{6} (a+b x)^m \left(\left(9 a (d e+c f) g x^2 \text{AppellF1}\left[2,-m,1,3,-\frac{b x}{a},-\frac{h x}{g}\right]\right)\Big/\left((g+h x) \left(3 a g \text{AppellF1}\left[2,-m,1,3,-\frac{b x}{a},-\frac{h x}{g}\right]+b g m x \text{AppellF1}\left[3,1-m,1,4,-\frac{b x}{a},-\frac{h x}{g}\right]-a h x \text{AppellF1}\left[3,-m,2,4,-\frac{b x}{a},-\frac{h x}{g}\right]\right)\right)+\left(8 a d f g x^3 \text{AppellF1}\left[3,-m,1,4,-\frac{b x}{a},-\frac{h x}{g}\right]\right)\Big/\left((g+h x) \left(4 a g \text{AppellF1}\left[3,-m,1,4,-\frac{b x}{a},-\frac{h x}{g}\right]+b g m x \text{AppellF1}\left[4,1-m,1,5,-\frac{b x}{a},-\frac{h x}{g}\right]-a h x \text{AppellF1}\left[4,-m,2,5,-\frac{b x}{a},-\frac{h x}{g}\right]\right)\right)+\frac{6 c e \left(\frac{h (a+b x)}{b (g+h x)}\right)^{-m} \text{Hypergeometric2F1}\left[-m,-m,1-m,\frac{b g-a h}{b g+b h x}\right]}{h m}\right)$$

Problem 121: Result unnecessarily involves higher level functions and more

than twice size of optimal antiderivative.

$$\int \frac{(a+b x)^m (c+d x)}{(e+f x) (g+h x)} \, dx$$

Optimal (type 5, 140 leaves, 3 steps):

$$-\frac{(d e-c f) (a+b x)^{1+m} \text{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{f (a+b x)}{b e-a f}\right]}{(b e-a f) (f g-e h) (1+m)}+\frac{(d g-c h) (a+b x)^{1+m} \text{Hypergeometric2F1}\left[1,1+m,2+m,-\frac{h (a+b x)}{b g-a h}\right]}{(b g-a h) (f g-e h) (1+m)}$$

Result (type 6, 390 leaves):

$$\frac{1}{2} (a+b x)^m \left(3 a d x^2 \left(\left(e f \text{AppellF1}\left[2,-m,1,3,-\frac{b x}{a},-\frac{f x}{e}\right]\right) \Big/ \left((f g-e h) (e+f x) \left(3 a e \text{AppellF1}\left[2,-m,1,3,-\frac{b x}{a},-\frac{f x}{e}\right]+b e m x \text{AppellF1}\left[3,1-m,1,4,-\frac{b x}{a},-\frac{f x}{e}\right]-a f x \text{AppellF1}\left[3,-m,2,4,-\frac{b x}{a},-\frac{f x}{e}\right]\right)\right)+\left(g h \text{AppellF1}\left[2,-m,1,3,-\frac{b x}{a},-\frac{h x}{g}\right]\right) \Big/ \left((-f g+e h) (g+h x) \left(3 a g \text{AppellF1}\left[2,-m,1,3,-\frac{b x}{a},-\frac{h x}{g}\right]+b g m x \text{AppellF1}\left[3,1-m,1,4,-\frac{b x}{a},-\frac{h x}{g}\right]-a h x \text{AppellF1}\left[3,-m,2,4,-\frac{b x}{a},-\frac{h x}{g}\right]\right)\right)\right)+\frac{1}{f g m-e h m}\left(2 c \left(\frac{f (a+b x)}{b (e+f x)}\right)^{-m} \text{Hypergeometric2F1}\left[-m,-m,1-m,\frac{b e-a f}{b e+b f x}\right]-2 c \left(\frac{h (a+b x)}{b (g+h x)}\right)^{-m} \text{Hypergeometric2F1}\left[-m,-m,1-m,\frac{b g-a h}{b g+b h x}\right]\right)\right)$$

Problem 123: Result more than twice size of optimal antiderivative.

$$\int \frac{x^m (e+f x)^n}{(a+b x) (c+d x)} \, dx$$

Optimal (type 6, 140 leaves, 6 steps):

$$\frac{b x^{1+m} (e+f x)^n \left(1+\frac{f x}{e}\right)^{-n} \text{AppellF1}\left[1+m,-n,1,2+m,-\frac{f x}{e},-\frac{b x}{a}\right]}{a (b c-a d) (1+m)}-\frac{d x^{1+m} (e+f x)^n \left(1+\frac{f x}{e}\right)^{-n} \text{AppellF1}\left[1+m,-n,1,2+m,-\frac{f x}{e},-\frac{d x}{c}\right]}{c (b c-a d) (1+m)}$$

Result (type 6, 309 leaves):

$$\frac{1}{1+m}e\,(2+m)\,x^{1+m}\,(e+f\,x)^{n}$$
$$\Bigg(-\Bigg(\Bigg(a\,b\,\text{AppellF1}\Big[1+m,\,-n,\,1,\,2+m,\,-\frac{f\,x}{e},\,-\frac{b\,x}{a}\Big]\Bigg)\Bigg/\Bigg((-b\,c+a\,d)\,(a+b\,x)$$
$$\Bigg(a\,e\,(2+m)\,\text{AppellF1}\Big[1+m,\,-n,\,1,\,2+m,\,-\frac{f\,x}{e},\,-\frac{b\,x}{a}\Big]+x\,\Bigg(a\,f\,n\,\text{AppellF1}\Big[2+m,\,1-$$
$$n,\,1,\,3+m,\,-\frac{f\,x}{e},\,-\frac{b\,x}{a}\Big]-b\,e\,\text{AppellF1}\Big[2+m,\,-n,\,2,\,3+m,\,-\frac{f\,x}{e},\,-\frac{b\,x}{a}\Big]\Bigg)\Bigg)\Bigg)\Bigg)-$$
$$\Bigg(c\,d\,\text{AppellF1}\Big[1+m,\,-n,\,1,\,2+m,\,-\frac{f\,x}{e},\,-\frac{d\,x}{c}\Big]\Bigg)\Bigg/\Bigg((b\,c-a\,d)\,(c+d\,x)$$
$$\Bigg(c\,e\,(2+m)\,\text{AppellF1}\Big[1+m,\,-n,\,1,\,2+m,\,-\frac{f\,x}{e},\,-\frac{d\,x}{c}\Big]+x\,\Bigg(c\,f\,n\,\text{AppellF1}\Big[2+m,\,1-n,$$
$$1,\,3+m,\,-\frac{f\,x}{e},\,-\frac{d\,x}{c}\Big]-d\,e\,\text{AppellF1}\Big[2+m,\,-n,\,2,\,3+m,\,-\frac{f\,x}{e},\,-\frac{d\,x}{c}\Big]\Bigg)\Bigg)\Bigg)\Bigg)$$

Problem 124: Result unnecessarily involves higher level functions.

$$\int (a+b\,x)^{m}\,(c+d\,x)^{n}\,(e+f\,x)\,(g+h\,x)\,dx$$

Optimal (type 5, 266 leaves, 3 steps):

$$-\Big(\Big((a+b\,x)^{1+m}\,(c+d\,x)^{1+n}\,\big(b\,c\,f\,h\,(2+m)+a\,d\,f\,h\,(2+n)-$$
$$b\,d\,(f\,g+e\,h)\,(3+m+n)-b\,d\,f\,h\,(2+m+n)\,x\big)\Big)\Big/\big(b^{2}\,d^{2}\,(2+m+n)\,(3+m+n)\big)\Big)+$$
$$\Big(\big(a^{2}\,d^{2}\,f\,h\,(1+n)\,(2+n)+a\,b\,d\,(1+n)\,(2\,c\,f\,h\,(1+m)-d\,(f\,g+e\,h)\,(3+m+n))+$$
$$b^{2}\,(c^{2}\,f\,h\,(1+m)\,(2+m)-c\,d\,(f\,g+e\,h)\,(1+m)\,(3+m+n)+d^{2}\,e\,g\,(2+m+n)\,(3+m+n))\big)$$
$$(a+b\,x)^{1+m}\,(c+d\,x)^{n}\,\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^{-n}\,\text{Hypergeometric2F1}\Big[1+m,\,-n,\,2+m,\,-\frac{d\,(a+b\,x)}{b\,c-a\,d}\Big]\Big)\Big/$$
$$\big(b^{3}\,d^{2}\,(1+m)\,(2+m+n)\,(3+m+n)\big)$$

Result (type 6, 335 leaves):

$$\frac{1}{3}\,(a+b\,x)^{m}\,(c+d\,x)^{n}\,\Bigg(\Bigg(9\,a\,c\,(f\,g+e\,h)\,x^{2}\,\text{AppellF1}\Big[2,\,-m,\,-n,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]\Bigg)\Bigg/$$
$$\Bigg(2\,\Bigg(3\,a\,c\,\text{AppellF1}\Big[2,\,-m,\,-n,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]+b\,c\,m\,x\,\text{AppellF1}\Big[3,\,1-m,\,-n,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]+$$
$$a\,d\,n\,x\,\text{AppellF1}\Big[3,\,-m,\,1-n,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]\Bigg)\Bigg)+$$
$$\Bigg(4\,a\,c\,f\,h\,x^{3}\,\text{AppellF1}\Big[3,\,-m,\,-n,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]\Bigg)\Bigg/$$
$$\Bigg(4\,a\,c\,\text{AppellF1}\Big[3,\,-m,\,-n,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]+b\,c\,m\,x\,\text{AppellF1}\Big[4,\,1-m,\,-n,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]+$$
$$a\,d\,n\,x\,\text{AppellF1}\Big[4,\,-m,\,1-n,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\Big]\Bigg)+\frac{1}{d\,(1+n)}$$
$$3\,e\,g\,\left(\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^{-m}\,(c+d\,x)\,\text{Hypergeometric2F1}\Big[-m,\,1+n,\,2+n,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Bigg)$$

Problem 125: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+b\,x)^m\,(c+d\,x)^{1-m}\,(e+f\,x)\,(g+h\,x)\,dx$$

Optimal (type 5, 245 leaves, 3 steps):

$$\frac{1}{12\,b^2\,d^2}(a+b\,x)^{1+m}\,(c+d\,x)^{2-m}\,\big(4\,b\,d\,(f\,g+e\,h)-a\,d\,f\,h\,(3-m)-b\,c\,f\,h\,(2+m)+3\,b\,d\,f\,h\,x\big)+$$
$$\frac{1}{12\,b^4\,d^2\,(1+m)}(b\,c-a\,d)\,\Big(a^2\,d^2\,f\,h\,(6-5\,m+m^2)-2\,a\,b\,d\,(2-m)\,\big(2\,d\,(f\,g+e\,h)-c\,f\,h\,(1+m)\big)+$$
$$b^2\,\big(12\,d^2\,e\,g-4\,c\,d\,(f\,g+e\,h)\,(1+m)+c^2\,f\,h\,(2+3\,m+m^2)\big)\Big)\,(a+b\,x)^{1+m}$$
$$(c+d\,x)^{-m}\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^m\text{Hypergeometric2F1}\left[-1+m,\,1+m,\,2+m,\,-\frac{d\,(a+b\,x)}{b\,c-a\,d}\right]$$

Result (type 6, 1043 leaves):

$$\left(3\,a\,c\,d\,e\,g\,x^2\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[2,\,-m,\,m,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(6\,a\,c\,\text{AppellF1}\left[2,\,-m,\,m,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+\right.$$
$$\left.2\,m\,x\left(b\,c\,\text{AppellF1}\left[3,\,1-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-a\,d\,\text{AppellF1}\left[3,\,-m,\,1+m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\right)+$$
$$\left(3\,a\,c^2\,f\,g\,x^2\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[2,\,-m,\,m,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(6\,a\,c\,\text{AppellF1}\left[2,\,-m,\,m,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+\right.$$
$$\left.2\,m\,x\left(b\,c\,\text{AppellF1}\left[3,\,1-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-a\,d\,\text{AppellF1}\left[3,\,-m,\,1+m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\right)+$$
$$\left(3\,a\,c^2\,e\,h\,x^2\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[2,\,-m,\,m,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(6\,a\,c\,\text{AppellF1}\left[2,\,-m,\,m,\,3,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+\right.$$
$$\left.2\,m\,x\left(b\,c\,\text{AppellF1}\left[3,\,1-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-a\,d\,\text{AppellF1}\left[3,\,-m,\,1+m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\right)+$$
$$\left(4\,a\,c\,d\,f\,g\,x^3\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[3,\,-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(12\,a\,c\,\text{AppellF1}\left[3,\,-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+3\,b\,c\,m\,x\,\text{AppellF1}\left[4,\,1-m,\,m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-\right.$$
$$\left.3\,a\,d\,m\,x\,\text{AppellF1}\left[4,\,-m,\,1+m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)+$$
$$\left(4\,a\,c\,d\,e\,h\,x^3\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[3,\,-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(12\,a\,c\,\text{AppellF1}\left[3,\,-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+3\,b\,c\,m\,x\,\text{AppellF1}\left[4,\,1-m,\,m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-\right.$$
$$\left.3\,a\,d\,m\,x\,\text{AppellF1}\left[4,\,-m,\,1+m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)+$$

$$\left(4\,a\,c^2\,f\,h\,x^3\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[3,\,-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(12\,a\,c\,\text{AppellF1}\left[3,\,-m,\,m,\,4,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+3\,b\,c\,m\,x\,\text{AppellF1}\left[4,\,1-m,\,m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-\right.$$
$$\left.3\,a\,d\,m\,x\,\text{AppellF1}\left[4,\,-m,\,1+m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)+$$
$$\left(5\,a\,c\,d\,f\,h\,x^4\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{AppellF1}\left[4,\,-m,\,m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)\Big/$$
$$\left(20\,a\,c\,\text{AppellF1}\left[4,\,-m,\,m,\,5,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]+4\,b\,c\,m\,x\,\text{AppellF1}\left[5,\,1-m,\,m,\,6,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]-\right.$$
$$\left.4\,a\,d\,m\,x\,\text{AppellF1}\left[5,\,-m,\,1+m,\,6,\,-\frac{b\,x}{a},\,-\frac{d\,x}{c}\right]\right)-$$
$$\frac{1}{d\,(-1+m)}c\,e\,g\,(c+d\,x)^{1-m}\left(a-\frac{b\,c}{d}+\frac{b\,(c+d\,x)}{d}\right)^m\left(1+\frac{b\,(c+d\,x)}{\left(a-\frac{b\,c}{d}\right)d}\right)^{-m}$$
$$\text{Hypergeometric2F1}\left[1-m,\,-m,\,2-m,\,-\frac{b\,(c+d\,x)}{\left(a-\frac{b\,c}{d}\right)d}\right]$$

Problem 126: Result unnecessarily involves higher level functions.

$$\int (a+b\,x)^m\,(c+d\,x)^{-m}\,(e+f\,x)\,(g+h\,x)\,dx$$

Optimal (type 5, 235 leaves, 3 steps):

$$\frac{1}{6\,b^2\,d^2}(a+b\,x)^{1+m}\,(c+d\,x)^{1-m}\,(3\,b\,d\,(f\,g+e\,h)-a\,d\,f\,h\,(2-m)-b\,c\,f\,h\,(2+m)+2\,b\,d\,f\,h\,x)+$$
$$\frac{1}{6\,b^3\,d^2\,(1+m)}\left(a^2\,d^2\,f\,h\,(2-3\,m+m^2)-a\,b\,d\,(1-m)\,(3\,d\,(f\,g+e\,h)-2\,c\,f\,h\,(1+m))+\right.$$
$$\left.b^2\,(6\,d^2\,e\,g-3\,c\,d\,(f\,g+e\,h)\,(1+m)+c^2\,f\,h\,(2+3\,m+m^2))\right)(a+b\,x)^{1+m}$$
$$(c+d\,x)^{-m}\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^m\text{Hypergeometric2F1}\left[m,\,1+m,\,2+m,\,-\frac{d\,(a+b\,x)}{b\,c-a\,d}\right]$$

Result (type 6, 324 leaves):

$$(a+b\,x)^m\,(c+d\,x)^{-m}\left(\left(3\,a\,c\,(f\,g+e\,h)\,x^2\,\text{AppellF1}\left[2,-m,m,3,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]\right)\Big/\left(6\,a\,c\,\text{AppellF1}\left[2,-m,m,3,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]+2\,m\,x\left(b\,c\,\text{AppellF1}\left[3,1-m,m,4,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]-a\,d\,\text{AppellF1}\left[3,-m,1+m,4,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]\right)\right)+\left(4\,a\,c\,f\,h\,x^3\,\text{AppellF1}\left[3,-m,m,4,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]\right)\Big/\left(12\,a\,c\,\text{AppellF1}\left[3,-m,m,4,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]+3\,b\,c\,m\,x\,\text{AppellF1}\left[4,1-m,m,5,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]-3\,a\,d\,m\,x\,\text{AppellF1}\left[4,-m,1+m,5,-\frac{b\,x}{a},-\frac{d\,x}{c}\right]\right)-\frac{1}{d\,(-1+m)}e\,g\left(\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^{-m}(c+d\,x)\,\text{Hypergeometric2F1}\left[1-m,-m,2-m,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)$$

Problem 127: Result unnecessarily involves higher level functions.

$$\int (a+b\,x)^m\,(c+d\,x)^{-1-m}\,(e+f\,x)\,(g+h\,x)\,dx$$

Optimal (type 5, 261 leaves, 3 steps):

$$\left((a+b\,x)^{1+m}\,(c+d\,x)^{-m}\left(2\,b\,d^2\,e\,g+b\,c^2\,f\,h\,(2+m)-c\,d\,(2\,b\,(f\,g+e\,h)+a\,f\,h\,m)+d\,(b\,c-a\,d)\,f\,h\,m\,x\right)\right)\Big/\left(2\,b\,d^2\,(b\,c-a\,d)\,m\right)-\left(\left(b^2\,c^2\,f\,h\,(1+m)\,(2+m)-2\,b\,c\,d\,(1+m)\,(b\,f\,g+b\,e\,h+a\,f\,h\,m)+d^2\,\left(2\,b^2\,e\,g+2\,a\,b\,(f\,g+e\,h)\,m-a^2\,f\,h\,(1-m)\,m\right)\right)(a+b\,x)^{1+m}\,(c+d\,x)^{-m}\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^m\text{Hypergeometric2F1}\left[m,1+m,2+m,-\frac{d\,(a+b\,x)}{b\,c-a\,d}\right]\right)\Big/\left(2\,b^2\,d^2\,(b\,c-a\,d)\,m\,(1+m)\right)$$

Result (type 6, 346 leaves):

$$\frac{1}{6}(a+b x)^m (c+d x)^{-m}\left(\left(9 a c (f g+e h) x^2 \text{AppellF1}\left[2,-m,1+m,3,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\Big/\left((c+d x)\left(3 a c \text{AppellF1}\left[2,-m,1+m,3,-\frac{b x}{a},-\frac{d x}{c}\right]+b c m x \text{AppellF1}\left[3,1-m,1+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]-a d (1+m) x \text{AppellF1}\left[3,-m,2+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\right)+\left(8 a c f h x^3 \text{AppellF1}\left[3,-m,1+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\Big/\left((c+d x)\left(4 a c \text{AppellF1}\left[3,-m,1+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]+b c m x \text{AppellF1}\left[4,1-m,1+m,5,-\frac{b x}{a},-\frac{d x}{c}\right]-a d (1+m) x \text{AppellF1}\left[4,-m,2+m,5,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\right)-\frac{6 e g \left(\frac{d (a+b x)}{-b c+a d}\right)^{-m} \text{Hypergeometric2F1}\left[-m,-m,1-m,\frac{b (c+d x)}{b c-a d}\right]}{d m}\right)$$

Problem 128: Result unnecessarily involves higher level functions.

$$\int (a+b x)^m (c+d x)^{-2-m} (e+f x) (g+h x) \, dx$$

Optimal (type 5, 203 leaves, 3 steps):

$$\left((a+b x)^{1+m} (c+d x)^{-1-m}\left(b d^2 e g+b c^2 f h (2+m)-c d (b (f g+e h)+a f h (1+m))+d (b c-a d) f h (1+m) x\right)\right)\Big/\left(b d^2 (b c-a d)(1+m)\right)-\frac{1}{b d^3 m}(a d f h m+b (d (f g+e h)-c f h (2+m)))(a+b x)^m\left(-\frac{d (a+b x)}{b c-a d}\right)^{-m}(c+d x)^{-m} \text{Hypergeometric2F1}\left[-m,-m,1-m,\frac{b (c+d x)}{b c-a d}\right]$$

Result (type 6, 303 leaves):

$$\frac{1}{6}(a+b x)^m (c+d x)^{-2-m}\left(\frac{6 e g (a+b x)(c+d x)}{(b c-a d)(1+m)}-\left(9 a c (f g+e h) x^2 \text{AppellF1}\left[2,-m,2+m,3,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\Big/\left(-3 a c \text{AppellF1}\left[2,-m,2+m,3,-\frac{b x}{a},-\frac{d x}{c}\right]-b c m x \text{AppellF1}\left[3,1-m,2+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]+a d (2+m) x \text{AppellF1}\left[3,-m,3+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]\right)-\left(8 a c f h x^3 \text{AppellF1}\left[3,-m,2+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\Big/\left(-4 a c \text{AppellF1}\left[3,-m,2+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]-b c m x \text{AppellF1}\left[4,1-m,2+m,5,-\frac{b x}{a},-\frac{d x}{c}\right]+a d (2+m) x \text{AppellF1}\left[4,-m,3+m,5,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\right)$$

Problem 129: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+b x)^m (c+d x)^{-3-m} (e+f x) (g+h x) \, dx$$

Optimal (type 5, 246 leaves, 3 steps):

$$-\left(\left(\left((a+b x)^{1+m} (c+d x)^{-2-m} \left(a^2 b c f h m-a^3 d f h (1+m)-b^3 c e g (2+m)+a b^2 (c (f g+e h)+d e g (1+m))-b \left(a^2 d f h (3+2 m)+b^2 (d e g+c (f g+e h) (1+m))-a b (2 c f h (1+m)+d (f g+e h) (2+m))\right) x\right)\right)\Big/\left(b^2 (b c-a d)^2 (1+m) (2+m)\right)\right)+\left(f h (a+b x)^{3+m} (c+d x)^{-m} \left(\frac{b (c+d x)}{b c-a d}\right)^m \text{Hypergeometric2F1}\left[3+m,3+m,4+m,-\frac{d (a+b x)}{b c-a d}\right]\right)\Big/\left((b c-a d)^3 (3+m)\right)$$

Result (type 6, 633 leaves):

$$\frac{1}{3} (a+b x)^m (c+d x)^{-3-m} \left(\left(3 f g \left(\frac{c (a+b x)}{a (c+d x)}\right)^{-m} (c+d x) \left(b^2 c^2 (1+m) x^2 \left(\frac{c (a+b x)}{a (c+d x)}\right)^m-a b c x \left(\frac{c (a+b x)}{a (c+d x)}\right)^m (-c m+d (2+m) x)+a^2 \left(d^2 x^2-c^2 \left(-1+\left(\frac{c (a+b x)}{a (c+d x)}\right)^m\right)-c d x \left(-2+2 \left(\frac{c (a+b x)}{a (c+d x)}\right)^m+m \left(\frac{c (a+b x)}{a (c+d x)}\right)^m\right)\right)\right)\right)\Big/\left(c (b c-a d)^2 (1+m) (2+m)\right)+\left(3 e h \left(\frac{c (a+b x)}{a (c+d x)}\right)^{-m} (c+d x) \left(b^2 c^2 (1+m) x^2 \left(\frac{c (a+b x)}{a (c+d x)}\right)^m-a b c x \left(\frac{c (a+b x)}{a (c+d x)}\right)^m (-c m+d (2+m) x)+a^2 \left(d^2 x^2-c^2 \left(-1+\left(\frac{c (a+b x)}{a (c+d x)}\right)^m\right)-c d x \left(-2+2 \left(\frac{c (a+b x)}{a (c+d x)}\right)^m+m \left(\frac{c (a+b x)}{a (c+d x)}\right)^m\right)\right)\right)\right)\Big/\left(c (b c-a d)^2 (1+m) (2+m)\right)-\left(4 a c f h x^3 \text{AppellF1}\left[3,-m,3+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]\right)\Big/\left(-4 a c \text{AppellF1}\left[3,-m,3+m,4,-\frac{b x}{a},-\frac{d x}{c}\right]-b c m x \text{AppellF1}\left[4,1-m,3+m,5,-\frac{b x}{a},-\frac{d x}{c}\right]+a d (3+m) x \text{AppellF1}\left[4,-m,4+m,5,-\frac{b x}{a},-\frac{d x}{c}\right]\right)-\frac{1}{d (2+m)} 3 e g \left(\frac{d (a+b x)}{-b c+a d}\right)^{-m} (c+d x) \text{Hypergeometric2F1}\left[-2-m,-m,-1-m,\frac{b (c+d x)}{b c-a d}\right]\right)$$

Problem 132: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+b x)^3 (c+d x)^{-4-m} (e+f x)^m (g+h x)\, dx$$

Optimal (type 5, 815 leaves, 10 steps):

$$\left((b c-a d)^2 (a d f+b (c f (2+m)-d e (3+m))) (c f h (4+m)-d (f g+e h (3+m))) (c+d x)^{-3-m} (e+f x)^{1+m}\right)\Big/\left(d^4 f^2 (d e-c f) (3+m)\right)-\frac{1}{d^3 f^2} b (b c-a d) (c f h (4+m)-d (f g+e h (3+m))) (a+b x) (c+d x)^{-3-m} (e+f x)^{1+m}+\frac{h (a+b x)^3 (c+d x)^{-3-m} (e+f x)^{1+m}}{d f}-\left((b c-a d)^2 (3 a d f h-b (c f h (4+m)-d (f g+e h m))) (c+d x)^{-2-m} (e+f x)^{1+m}\right)\Big/\left(d^4 f (d e-c f) (2+m)\right)+\left((b c-a d) (c f h (4+m)-d (f g+e h (3+m))) \left(2 a^2 d^2 f^2+2 a b d f (c f (1+m)-d e (3+m))+b^2 \left(c^2 f^2 \left(2+3 m+m^2\right)-2 c d e f \left(3+4 m+m^2\right)+d^2 e^2 \left(6+5 m+m^2\right)\right)\right) (c+d x)^{-2-m} (e+f x)^{1+m}\right)\Big/\left(d^4 f^2 (d e-c f)^2 (2+m) (3+m)\right)-\left((b c-a d) (a d f-b (2 d e (2+m)-c f (3+2 m))) (3 a d f h-b (c f h (4+m)-d (f g+e h m))) (c+d x)^{-1-m} (e+f x)^{1+m}\right)\Big/\left(d^4 f (d e-c f)^2 (1+m) (2+m)\right)-\left((b c-a d) (c f h (4+m)-d (f g+e h (3+m))) \left(2 a^2 d^2 f^2+2 a b d f (c f (1+m)-d e (3+m))+b^2 \left(c^2 f^2 \left(2+3 m+m^2\right)-2 c d e f \left(3+4 m+m^2\right)+d^2 e^2 \left(6+5 m+m^2\right)\right)\right) (c+d x)^{-1-m} (e+f x)^{1+m}\right)\Big/\left(d^4 f (d e-c f)^3 (1+m) (2+m) (3+m)\right)-\frac{1}{d^5 f m} b^2 (3 a d f h-b (c f h (4+m)-d (f g+e h m))) (c+d x)^{-m} (e+f x)^m \left(\frac{d (e+f x)}{d e-c f}\right)^{-m} \text{Hypergeometric2F1}\left[-m,-m,1-m,-\frac{f (c+d x)}{d e-c f}\right]$$

Result (type 6, 10997 leaves):

$$\left(3 a b^2 g (c+d x)^{-3-m} (e+f x)^m \left(-2 d^3 e^3 x^3 \left(\frac{e (c+d x)}{c (e+f x)}\right)^m+c d^2 e^2 x^2 \left(f \left(6+5 m+m^2\right) x+e \left(6+5 m+m^2-6 \left(\frac{e (c+d x)}{c (e+f x)}\right)^m\right)\right)+c^3 \left(-2 e^2 f m x+e f^2 m (1+m) x^2+f^3 \left(2+3 m+m^2\right) x^3-2 e^3 \left(-1+\left(\frac{e (c+d x)}{c (e+f x)}\right)^m\right)\right)-2 c^2 d e x \left(e f m (3+m) x+f^2 \left(3+4 m+m^2\right) x^2+e^2 \left(-3-m+3 \left(\frac{e (c+d x)}{c (e+f x)}\right)^m\right)\right)\right)\right)\Big/\left(c (-d e+c f)^3 (1+m) (2+m) (3+m)\right)+\left(3 a^2 b h (c+d x)^{-3-m} (e+f x)^m \left(-2 d^3 e^3 x^3 \left(\frac{e (c+d x)}{c (e+f x)}\right)^m+c d^2 e^2 x^2 \left(f \left(6+5 m+m^2\right) x+e \left(6+5 m+m^2-6 \left(\frac{e (c+d x)}{c (e+f x)}\right)^m\right)\right)+\right.\right.$$

$$c^3 \left(-2 e^2 f m x+e f^2 m (1+m) x^2+f^3 \left(2+3 m+m^2\right) x^3-2 e^3 \left(-1+\left(\frac{e (c+d x)}{c (e+f x)}\right)^m\right)\right)-$$

$$2 c^2 d e x \left(e f m (3+m) x+f^2 \left(3+4 m+m^2\right) x^2+e^2 \left(-3-m+3 \left(\frac{e (c+d x)}{c (e+f x)}\right)^m\right)\right)\Big)\Big)\Big)\Big/$$

$$\left(c (-d e+c f)^3 (1+m) (2+m) (3+m)\right)+$$

$$\left(5 b^3 c e g x^4 (c+d x)^{-4-m} (e+f x)^m \text{AppellF1}\left[4, 4+m, -m, 5, -\frac{d x}{c}, -\frac{f x}{e}\right]\right)\Big/$$

$$\Big(4 \Big(5 c e \text{AppellF1}\left[4, 4+m, -m, 5, -\frac{d x}{c}, -\frac{f x}{e}\right]+c f m x \text{AppellF1}\Big[5, 4+m, 1-m,$$

$$6, -\frac{d x}{c}, -\frac{f x}{e}\Big]-d e (4+m) x \text{AppellF1}\left[5, 5+m, -m, 6, -\frac{d x}{c}, -\frac{f x}{e}\right]\Big)\Big)+$$

$$\left(15 a b^2 c e h x^4 (c+d x)^{-4-m} (e+f x)^m \text{AppellF1}\left[4, 4+m, -m, 5, -\frac{d x}{c}, -\frac{f x}{e}\right]\right)\Big/$$

$$\Big(4 \Big(5 c e \text{AppellF1}\left[4, 4+m, -m, 5, -\frac{d x}{c}, -\frac{f x}{e}\right]+c f m x \text{AppellF1}\Big[5, 4+m, 1-m,$$

$$6, -\frac{d x}{c}, -\frac{f x}{e}\Big]-d e (4+m) x \text{AppellF1}\left[5, 5+m, -m, 6, -\frac{d x}{c}, -\frac{f x}{e}\right]\Big)\Big)+$$

$$\left(6 b^3 c e h x^5 (c+d x)^{-4-m} (e+f x)^m \text{AppellF1}\left[5, 4+m, -m, 6, -\frac{d x}{c}, -\frac{f x}{e}\right]\right)\Big/$$

$$\Big(5 \Big(6 c e \text{AppellF1}\left[5, 4+m, -m, 6, -\frac{d x}{c}, -\frac{f x}{e}\right]+c f m x \text{AppellF1}\Big[6, 4+m, 1-m,$$

$$7, -\frac{d x}{c}, -\frac{f x}{e}\Big]-d e (4+m) x \text{AppellF1}\left[6, 5+m, -m, 7, -\frac{d x}{c}, -\frac{f x}{e}\right]\Big)\Big)+$$

$$\Big(3 a^2 b e g x^2 (c+d x)^{-3-m} \left(\frac{c+d x}{c}\right)^{4+m} \left(1+\frac{d x}{c}\right)^{-4-m} (e+f x)^{-1+m} \left(\frac{e+f x}{e}\right)^{-m} \left(1+\frac{f x}{e}\right)^{1+m}$$

$$\Big(c (4+m) (3 e+f x) \Big(-2 d^3 e^3 x^3+c^3 \Big(-2 e^2 f m x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+e f^2 m (1+m) x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+$$

$$f^3 \left(2+3 m+m^2\right) x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+2 e^3 \left(-1+\left(\frac{c (e+f x)}{e (c+d x)}\right)^m\right)\Big)-$$

$$2 c^2 d e x \Big(e f m (3+m) x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+f^2 \left(3+4 m+m^2\right) x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m-e^2 \Big(-3+$$

$$3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+m \left(\frac{c (e+f x)}{e (c+d x)}\right)^m\Big)\Big)+c d^2 e^2 x^2 \Big(f \left(6+5 m+m^2\right) x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+$$

$$e \left(-6+6 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+5 m \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+m^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m\right)\Big)\Big) \text{Gamma}[4+m]-$$

$$\Big(2 d^4 e^4 (1+m) x^4-2 c d^3 e^3 x^3 (-3 e m+f (4+m) x)+c^4 \Big(e^2 f^2 (-5+m) m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+$$

$$2 e f^3 m (1+m) x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+f^4 \left(2+3 m+m^2\right) x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+$$

$$6 e^4 \left(-1+\left(\frac{c (e+f x)}{e (c+d x)}\right)^m\right)-2 e^3 f x \left(4+m-4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m+2 m \left(\frac{c (e+f x)}{e (c+d x)}\right)^m\right)\Big)-$$

$$2\,c^3\,d\,e\,x\,\Big(2\,e\,f^2\,m\,(4+m)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^3\,(4+5\,m+m^2)\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$e^2\,f\,(4+m)\,x\,\Big(3-3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)-e^3\,\Big(-8+m+8\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+2$$

$$m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)+c^2\,d^2\,e^2\,x^2\,\Big(f^2\,(12+7\,m+m^2)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$2\,e\,f\,(4+m)\,x\,\Big(-3+3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)+e^2\,\Big(m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$12\,\Big(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)+m\,\Big(6+7\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)\Big)\Big)\,\mathrm{Gamma}[5+m]\Big)\Big)\Big/$$

$$\Big(c\,\Big(24\,c^4\,e^4\,\mathrm{Gamma}[4+m]+6\,c^4\,e^4\,m\,\mathrm{Gamma}[4+m]+96\,c^3\,d\,e^4\,x\,\mathrm{Gamma}[4+m]+$$

$$24\,c^3\,d\,e^4\,m\,x\,\mathrm{Gamma}[4+m]+144\,c^2\,d^2\,e^4\,x^2\,\mathrm{Gamma}[4+m]+36\,c^2\,d^2\,e^4\,m\,x^2\,\mathrm{Gamma}[4+m]+$$

$$96\,c\,d^3\,e^4\,x^3\,\mathrm{Gamma}[4+m]+24\,c\,d^3\,e^4\,m\,x^3\,\mathrm{Gamma}[4+m]+24\,d^4\,e^4\,x^4\,\mathrm{Gamma}[4+m]+$$

$$6\,d^4\,e^4\,m\,x^4\,\mathrm{Gamma}[4+m]-24\,c^4\,e^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$6\,c^4\,e^4\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-96\,c^3\,d\,e^4\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$48\,c^3\,d\,e^4\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+24\,c^4\,e^3\,f\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$6\,c^3\,d\,e^4\,m^2\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+6\,c^4\,e^3\,f\,m^2\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$144\,c^2\,d^2\,e^4\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-120\,c^2\,d^2\,e^4\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+$$

$$96\,c^3\,d\,e^3\,f\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-12\,c^4\,e^2\,f^2\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$33\,c^2\,d^2\,e^4\,m^2\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+48\,c^3\,d\,e^3\,f\,m^2\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$15\,c^4\,e^2\,f^2\,m^2\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-3\,c^2\,d^2\,e^4\,m^3\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+$$

$$6\,c^3\,d\,e^3\,f\,m^3\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-3\,c^4\,e^2\,f^2\,m^3\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$144\,c\,d^3\,e^4\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+144\,c^2\,d^2\,e^3\,f\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$144\,c^3\,d\,e^2\,f^2\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+48\,c^4\,e\,f^3\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$228\,c\,d^3\,e^4\,m\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]+444\,c^2\,d^2\,e^3\,f\,m\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\mathrm{Gamma}[4+m]-$$

$$348\, c^3\, d\, e^2\, f^2\, m\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 108\, c^4\, e\, f^3\, m\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$132\, c\, d^3\, e^4\, m^2\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 330\, c^2\, d^2\, e^3\, f\, m^2\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$282\, c^3\, d\, e^2\, f^2\, m^2\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 84\, c^4\, e\, f^3\, m^2\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$33\, c\, d^3\, e^4\, m^3\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 93\, c^2\, d^2\, e^3\, f\, m^3\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$87\, c^3\, d\, e^2\, f^2\, m^3\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 27\, c^4\, e\, f^3\, m^3\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$3\, c\, d^3\, e^4\, m^4\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 9\, c^2\, d^2\, e^3\, f\, m^4\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$9\, c^3\, d\, e^2\, f^2\, m^4\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 3\, c^4\, e\, f^3\, m^4\, x^3 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$96\, c\, d^3\, e^3\, f\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 144\, c^2\, d^2\, e^2\, f^2\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$96\, c^3\, d\, e\, f^3\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 24\, c^4\, f^4\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$128\, c\, d^3\, e^3\, f\, m\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 264\, c^2\, d^2\, e^2\, f^2\, m\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$192\, c^3\, d\, e\, f^3\, m\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 50\, c^4\, f^4\, m\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$62\, c\, d^3\, e^3\, f\, m^2\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 153\, c^2\, d^2\, e^2\, f^2\, m^2\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$126\, c^3\, d\, e\, f^3\, m^2\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 35\, c^4\, f^4\, m^2\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$13\, c\, d^3\, e^3\, f\, m^3\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 36\, c^2\, d^2\, e^2\, f^2\, m^3\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$33\, c^3\, d\, e\, f^3\, m^3\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 10\, c^4\, f^4\, m^3\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$c\, d^3\, e^3\, f\, m^4\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + 3\, c^2\, d^2\, e^2\, f^2\, m^4\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$3\, c^3\, d\, e\, f^3\, m^4\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] + c^4\, f^4\, m^4\, x^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[4+m] -$$

$$6\, c^4\, e^4\, \text{Gamma}[5+m] - 24\, c^3\, d\, e^4\, x\, \text{Gamma}[5+m] - 36\, c^2\, d^2\, e^4\, x^2\, \text{Gamma}[5+m] -$$

$$24\, c\, d^3\, e^4\, x^3\, \text{Gamma}[5+m] - 6\, d^4\, e^4\, x^4\, \text{Gamma}[5+m] +$$

$$6\, c^4\, e^4 \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[5+m] + 24\, c^3\, d\, e^4\, x \left(\frac{c\, (e+f\, x)}{e\, (c+d\, x)}\right)^m \text{Gamma}[5+m] +$$

$$6 c^3 d e^4 m x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 6 c^4 e^3 f m x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$36 c^2 d^2 e^4 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] + 21 c^2 d^2 e^4 m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] -$$
$$24 c^3 d e^3 f m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] + 3 c^4 e^2 f^2 m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$3 c^2 d^2 e^4 m^2 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 6 c^3 d e^3 f m^2 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$3 c^4 e^2 f^2 m^2 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] + 24 c d^3 e^4 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$26 c d^3 e^4 m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 36 c^2 d^2 e^3 f m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$12 c^3 d e^2 f^2 m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 2 c^4 e f^3 m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$9 c d^3 e^4 m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 21 c^2 d^2 e^3 f m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$15 c^3 d e^2 f^2 m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 3 c^4 e f^3 m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$c d^3 e^4 m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 3 c^2 d^2 e^3 f m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$3 c^3 d e^2 f^2 m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - c^4 e f^3 m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$24 c d^3 e^3 f x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 36 c^2 d^2 e^2 f^2 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$24 c^3 d e f^3 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 6 c^4 f^4 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$26 c d^3 e^3 f m x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 57 c^2 d^2 e^2 f^2 m x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$42 c^3 d e f^3 m x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 11 c^4 f^4 m x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$9 c d^3 e^3 f m^2 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 24 c^2 d^2 e^2 f^2 m^2 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$21 c^3 d e f^3 m^2 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 6 c^4 f^4 m^2 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$c d^3 e^3 f m^3 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - 3 c^2 d^2 e^2 f^2 m^3 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] +$$
$$3 c^3 d e f^3 m^3 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m] - c^4 f^4 m^3 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[5+m]\Bigg)\Bigg) +$$

$$\left(a^3\,e\,h\,x^2\,(c+d\,x)^{-3-m}\left(\frac{c+d\,x}{c}\right)^{4+m}\left(1+\frac{d\,x}{c}\right)^{-4-m}(e+f\,x)^{-1+m}\left(\frac{e+f\,x}{e}\right)^{-m}\left(1+\frac{f\,x}{e}\right)^{1+m}\right.$$

$$\left(c\,(4+m)\,(3\,e+f\,x)\left(-2\,d^3\,e^3\,x^3+c^3\left(-2\,e^2\,f\,m\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+e\,f^2\,m\,(1+m)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.\right.\right.$$

$$\left.\left.f^3\,(2+3\,m+m^2)\,x^3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+2\,e^3\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)-\right.$$

$$2\,c^2\,d\,e\,x\left(e\,f\,m\,(3+m)\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^2\,(3+4\,m+m^2)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-e^2\left(-3+\right.\right.$$

$$\left.\left.3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)+c\,d^2\,e^2\,x^2\left(f\,(6+5\,m+m^2)\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.$$

$$\left.\left.\left.e\left(-6+6\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+5\,m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)\right)\text{Gamma}[4+m]-$$

$$\left(2\,d^4\,e^4\,(1+m)\,x^4-2\,c\,d^3\,e^3\,x^3\,(-3\,e\,m+f\,(4+m)\,x)+c^4\left(e^2\,f^2\,(-5+m)\,m\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.\right.$$

$$2\,e\,f^3\,m\,(1+m)\,x^3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^4\,(2+3\,m+m^2)\,x^4\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$\left.6\,e^4\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)-2\,e^3\,f\,x\left(4+m-4\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+2\,m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)-$$

$$2\,c^3\,d\,e\,x\left(2\,e\,f^2\,m\,(4+m)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^3\,(4+5\,m+m^2)\,x^3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.$$

$$e^2\,f\,(4+m)\,x\left(3-3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)-e^3\left(-8+m+8\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+2\right.$$

$$\left.\left.m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)+c^2\,d^2\,e^2\,x^2\left(f^2\,(12+7\,m+m^2)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.$$

$$2\,e\,f\,(4+m)\,x\left(-3+3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)+e^2\left(m^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.$$

$$\left.\left.\left.\left.\left.12\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)+m\left(6+7\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)\right)\right)\text{Gamma}[5+m]\right)\right)\Big/$$

$$\left(c\left(24\,c^4\,e^4\,\text{Gamma}[4+m]+6\,c^4\,e^4\,m\,\text{Gamma}[4+m]+96\,c^3\,d\,e^4\,x\,\text{Gamma}[4+m]+\right.\right.$$

$$24\,c^3\,d\,e^4\,m\,x\,\text{Gamma}[4+m]+144\,c^2\,d^2\,e^4\,x^2\,\text{Gamma}[4+m]+36\,c^2\,d^2\,e^4\,m\,x^2\,\text{Gamma}[4+m]+$$

$$96\,c\,d^3\,e^4\,x^3\,\text{Gamma}[4+m]+24\,c\,d^3\,e^4\,m\,x^3\,\text{Gamma}[4+m]+24\,d^4\,e^4\,x^4\,\text{Gamma}[4+m]+$$

$$6\,d^4\,e^4\,m\,x^4\,\text{Gamma}[4+m]-24\,c^4\,e^4\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\text{Gamma}[4+m]-$$

$$6\,c^4\,e^4\,m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\text{Gamma}[4+m]-96\,c^3\,d\,e^4\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\text{Gamma}[4+m]-$$

$$48\,c^3\,d\,e^4\,m\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\text{Gamma}[4+m]+24\,c^4\,e^3\,f\,m\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\text{Gamma}[4+m]-$$

$$6 c^3 d e^4 m^2 x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+6 c^4 e^3 f m^2 x \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$144 c^2 d^2 e^4 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-120 c^2 d^2 e^4 m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+$$
$$96 c^3 d e^3 f m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-12 c^4 e^2 f^2 m x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$33 c^2 d^2 e^4 m^2 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+48 c^3 d e^3 f m^2 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$15 c^4 e^2 f^2 m^2 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-3 c^2 d^2 e^4 m^3 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+$$
$$6 c^3 d e^3 f m^3 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-3 c^4 e^2 f^2 m^3 x^2 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$144 c d^3 e^4 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+144 c^2 d^2 e^3 f x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$144 c^3 d e^2 f^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+48 c^4 e f^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$228 c d^3 e^4 m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+444 c^2 d^2 e^3 f m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$348 c^3 d e^2 f^2 m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+108 c^4 e f^3 m x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$132 c d^3 e^4 m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+330 c^2 d^2 e^3 f m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$282 c^3 d e^2 f^2 m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+84 c^4 e f^3 m^2 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$33 c d^3 e^4 m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+93 c^2 d^2 e^3 f m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$87 c^3 d e^2 f^2 m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+27 c^4 e f^3 m^3 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$3 c d^3 e^4 m^4 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+9 c^2 d^2 e^3 f m^4 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$9 c^3 d e^2 f^2 m^4 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+3 c^4 e f^3 m^4 x^3 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$96 c d^3 e^3 f x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+144 c^2 d^2 e^2 f^2 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$96 c^3 d e f^3 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+24 c^4 f^4 x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$
$$128 c d^3 e^3 f m x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]+264 c^2 d^2 e^2 f^2 m x^4 \left(\frac{c (e+f x)}{e (c+d x)}\right)^m \text{Gamma}[4+m]-$$

$$192\,c^3\,d\,e\,f^3\,m\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+50\,c^4\,f^4\,m\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$62\,c\,d^3\,e^3\,f\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+153\,c^2\,d^2\,e^2\,f^2\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$126\,c^3\,d\,e\,f^3\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+35\,c^4\,f^4\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$13\,c\,d^3\,e^3\,f\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+36\,c^2\,d^2\,e^2\,f^2\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$33\,c^3\,d\,e\,f^3\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+10\,c^4\,f^4\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$c\,d^3\,e^3\,f\,m^4\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+3\,c^2\,d^2\,e^2\,f^2\,m^4\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$3\,c^3\,d\,e\,f^3\,m^4\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]+c^4\,f^4\,m^4\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[4+m]-$$

$$6\,c^4\,e^4\,\text{Gamma}[5+m]-24\,c^3\,d\,e^4\,x\,\text{Gamma}[5+m]-36\,c^2\,d^2\,e^4\,x^2\,\text{Gamma}[5+m]-$$

$$24\,c\,d^3\,e^4\,x^3\,\text{Gamma}[5+m]-6\,d^4\,e^4\,x^4\,\text{Gamma}[5+m]+$$

$$6\,c^4\,e^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+24\,c^3\,d\,e^4\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$6\,c^3\,d\,e^4\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-6\,c^4\,e^3\,f\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$36\,c^2\,d^2\,e^4\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+21\,c^2\,d^2\,e^4\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-$$

$$24\,c^3\,d\,e^3\,f\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+3\,c^4\,e^2\,f^2\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$3\,c^2\,d^2\,e^4\,m^2\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-6\,c^3\,d\,e^3\,f\,m^2\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$3\,c^4\,e^2\,f^2\,m^2\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+24\,c\,d^3\,e^4\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$26\,c\,d^3\,e^4\,m\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-36\,c^2\,d^2\,e^3\,f\,m\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$12\,c^3\,d\,e^2\,f^2\,m\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-2\,c^4\,e\,f^3\,m\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$9\,c\,d^3\,e^4\,m^2\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-21\,c^2\,d^2\,e^3\,f\,m^2\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$15\,c^3\,d\,e^2\,f^2\,m^2\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-3\,c^4\,e\,f^3\,m^2\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$c\,d^3\,e^4\,m^3\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]-3\,c^2\,d^2\,e^3\,f\,m^3\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\,\text{Gamma}[5+m]+$$

$$3\,c^3\,d\,e^2\,f^2\,m^3\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-c^4\,e\,f^3\,m^3\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$24\,c\,d^3\,e^3\,f\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-36\,c^2\,d^2\,e^2\,f^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$24\,c^3\,d\,e\,f^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-6\,c^4\,f^4\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$26\,c\,d^3\,e^3\,f\,m\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-57\,c^2\,d^2\,e^2\,f^2\,m\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$42\,c^3\,d\,e\,f^3\,m\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-11\,c^4\,f^4\,m\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$9\,c\,d^3\,e^3\,f\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-24\,c^2\,d^2\,e^2\,f^2\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$21\,c^3\,d\,e\,f^3\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-6\,c^4\,f^4\,m^2\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$c\,d^3\,e^3\,f\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-3\,c^2\,d^2\,e^2\,f^2\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]+$$
$$3\,c^3\,d\,e\,f^3\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]-c^4\,f^4\,m^3\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m \text{Gamma}[5+m]\Bigg)\Bigg)+$$
$$\Bigg(a^3\,f^3\,g\,(e+f\,x)^{1+m}\left(c-\frac{d\,e}{f}+\frac{d\,(e+f\,x)}{f}\right)^{-m}\left(1+\frac{d\,(e+f\,x)}{\left(c-\frac{d\,e}{f}\right)f}\right)^m$$
$$\text{Hypergeometric2F1}\left[1+m,\,4+m,\,2+m,\,-\frac{d\,(e+f\,x)}{\left(c-\frac{d\,e}{f}\right)f}\right]\Bigg)\Big/\Big((-d\,e+c\,f)^4$$
$$(1+m)\Big)$$

Problem 133: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int (a+b\,x)^2\,(c+d\,x)^{-4-m}\,(e+f\,x)^m\,(g+h\,x)\,dx$$

Optimal (type 5, 572 leaves, 9 steps):

$$\left(\left(b c-a d\right) \left(d g-c h\right) \left(a d f+b \left(c f \left(2+m\right)-d e \left(3+m\right)\right)\right) \left(c+d x\right)^{-3-m} \left(e+f x\right)^{1+m}\right) \Big/$$

$$\left(d^3 f \left(d e-c f\right) \left(3+m\right)\right)-\frac{b \left(d g-c h\right) \left(a+b x\right) \left(c+d x\right)^{-3-m} \left(e+f x\right)^{1+m}}{d^2 f}-$$

$$\frac{\left(b c-a d\right)^2 h \left(c+d x\right)^{-2-m} \left(e+f x\right)^{1+m}}{d^3 \left(d e-c f\right) \left(2+m\right)}-\left(\left(\left(d g-c h\right) \left(b^2 \left(d e-c f\right) \left(2+m\right) \left(c f \left(1+m\right)-d e \left(3+m\right)\right)-\right.\right.\right.$$

$$\left.\left.2 d f \left(b^2 c e+a^2 d f+a b \left(c f \left(1+m\right)-d e \left(3+m\right)\right)\right)\right)\right)$$

$$\left.\left(c+d x\right)^{-2-m} \left(e+f x\right)^{1+m}\right) \Big/ \left(d^3 f \left(d e-c f\right)^2 \left(2+m\right) \left(3+m\right)\right)-$$

$$\left(\left(b c-a d\right) h \left(a d f-b \left(2 d e \left(2+m\right)-c f \left(3+2 m\right)\right)\right) \left(c+d x\right)^{-1-m} \left(e+f x\right)^{1+m}\right) \Big/$$

$$\left(d^3 \left(d e-c f\right)^2 \left(1+m\right) \left(2+m\right)\right)+$$

$$\left(\left(\left(d g-c h\right) \left(b^2 \left(d e-c f\right) \left(2+m\right) \left(c f \left(1+m\right)-d e \left(3+m\right)\right)-\right.\right.\right.$$

$$\left.\left.2 d f \left(b^2 c e+a^2 d f+a b \left(c f \left(1+m\right)-d e \left(3+m\right)\right)\right)\right) \left(c+d x\right)^{-1-m} \left(e+f x\right)^{1+m}\right) \Big/$$

$$\left(d^3 \left(d e-c f\right)^3 \left(1+m\right) \left(2+m\right) \left(3+m\right)\right)-\frac{1}{d^4 m} b^2 h \left(c+d x\right)^{-m} \left(e+f x\right)^m \left(\frac{d \left(e+f x\right)}{d e-c f}\right)^{-m}$$

$$\text{Hypergeometric2F1}\left[-m,\ -m,\ 1-m,\ -\frac{f \left(c+d x\right)}{d e-c f}\right]$$

Result (type 6, 5412 leaves):

$$\left(b^2 g \left(c+d x\right)^{-3-m} \left(e+f x\right)^m\right.$$

$$\left(-2 d^3 e^3 x^3 \left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m+c d^2 e^2 x^2 \left(f \left(6+5 m+m^2\right) x+e \left(6+5 m+m^2-6 \left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m\right)\right)+\right.$$

$$c^3 \left(-2 e^2 f m x+e f^2 m \left(1+m\right) x^2+f^3 \left(2+3 m+m^2\right) x^3-2 e^3 \left(-1+\left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m\right)\right)-$$

$$\left.\left.2 c^2 d e x \left(e f m \left(3+m\right) x+f^2 \left(3+4 m+m^2\right) x^2+e^2 \left(-3-m+3 \left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m\right)\right)\right)\right) \Big/$$

$$\left(c \left(-d e+c f\right)^3 \left(1+m\right) \left(2+m\right) \left(3+m\right)\right)+\left(2 a b h \left(c+d x\right)^{-3-m} \left(e+f x\right)^m\right.$$

$$\left(-2 d^3 e^3 x^3 \left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m+c d^2 e^2 x^2 \left(f \left(6+5 m+m^2\right) x+e \left(6+5 m+m^2-6 \left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m\right)\right)+\right.$$

$$c^3 \left(-2 e^2 f m x+e f^2 m \left(1+m\right) x^2+f^3 \left(2+3 m+m^2\right) x^3-2 e^3 \left(-1+\left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m\right)\right)-$$

$$\left.\left.2 c^2 d e x \left(e f m \left(3+m\right) x+f^2 \left(3+4 m+m^2\right) x^2+e^2 \left(-3-m+3 \left(\frac{e \left(c+d x\right)}{c \left(e+f x\right)}\right)^m\right)\right)\right)\right) \Big/$$

$$\left(c \left(-d e+c f\right)^3 \left(1+m\right) \left(2+m\right) \left(3+m\right)\right)+$$

$$\left(5 b^2 c e h x^4 \left(c+d x\right)^{-4-m} \left(e+f x\right)^m \text{AppellF1}\left[4,\ 4+m,\ -m,\ 5,\ -\frac{d x}{c},\ -\frac{f x}{e}\right]\right) \Big/$$

$$\left(4 \left(5 c e\, \text{AppellF1}\left[4,\ 4+m,\ -m,\ 5,\ -\frac{d x}{c},\ -\frac{f x}{e}\right]+\right.\right.$$

$$c f m x\, \text{AppellF1}\left[5,\ 4+m,\ 1-m,\ 6,\ -\frac{d x}{c},\ -\frac{f x}{e}\right]-$$

$$d\,e\,(4+m)\,x\,\text{AppellF1}\Big[5,\,5+m,\,-m,\,6,\,-\frac{d\,x}{c},\,-\frac{f\,x}{e}\Big]\Big)\Big)+\Big(2\,a\,b\,g\,x^2\,(c+d\,x)^{-3-m}\,(e+f\,x)^m$$

$$\Big(c\,(4+m)\,(3\,e+f\,x)\,\Big(-2\,d^3\,e^3\,x^3+c^3\,\Big(-2\,e^2\,f\,m\,x\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+e\,f^2\,m\,(1+m)\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$f^3\,(2+3\,m+m^2)\,x^3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+2\,e^3\,\Big(-1+\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)-$$

$$2\,c^2\,d\,e\,x\,\Big(e\,f\,m\,(3+m)\,x\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+f^2\,(3+4\,m+m^2)\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m-e^2\,\Big(-3+$$

$$3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)+c\,d^2\,e^2\,x^2\,\Big(f\,(6+5\,m+m^2)\,x\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$e\,\Big(-6+6\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+5\,m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+m^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)\Big)\,\text{Gamma}[4+m]-$$

$$\Big(2\,d^4\,e^4\,(1+m)\,x^4-2\,c\,d^3\,e^3\,x^3\,(-3\,e\,m+f\,(4+m)\,x)+c^4\,\Big(e^2\,f^2\,(-5+m)\,m\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$2\,e\,f^3\,m\,(1+m)\,x^3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+f^4\,(2+3\,m+m^2)\,x^4\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$6\,e^4\,\Big(-1+\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)-2\,e^3\,f\,x\,\Big(4+m-4\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+2\,m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)-$$

$$2\,c^3\,d\,e\,x\,\Big(2\,e\,f^2\,m\,(4+m)\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+f^3\,(4+5\,m+m^2)\,x^3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$e^2\,f\,(4+m)\,x\,\Big(3-3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)-e^3\,\Big(-8+m+8\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+2$$

$$m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)+c^2\,d^2\,e^2\,x^2\,\Big(f^2\,(12+7\,m+m^2)\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$2\,e\,f\,(4+m)\,x\,\Big(-3+3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)+e^2\,\Big(m^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$12\,\Big(-1+\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)+m\,\Big(6+7\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)\Big)\Big)\,\text{Gamma}[5+m]\Big)\Big)\Big/$$

$$\Big(c\,\Big((4+m)\,\Big(6\,d^4\,e^4\,x^4+c^4\,\Big(6\,e^3\,f\,m\,x\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m-3\,e^2\,f^2\,m\,(1+m)\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$3\,e\,f^3\,(1+m)\,(2+m)^2\,x^3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+f^4\,(6+11\,m+6\,m^2+m^3)\,x^4\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m-$$

$$6\,e^4\,\Big(-1+\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)-3\,c^3\,d\,e\,x\,\Big(-2\,e^2\,f\,m\,(4+m)\,x\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+$$

$$e\,f^2\,(12+26\,m+17\,m^2+3\,m^3)\,x^2\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+f^3\,(8+14\,m+7\,m^2+m^3)$$

$$x^3\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+2\,e^3\,\Big(-4+4\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m+m\,\Big(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\Big)^m\Big)\Big)-$$

$$c\,d^3\,e^3\,x^3\,\Big(f\,(24+26\,m+9\,m^2+m^3)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+3\,e\,\Big(-8+12\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$16\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+7\,m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)+3\,c^2\,d^2\,e^2\,x^2$$

$$\Big(e\,f\,(12+34\,m+19\,m^2+3\,m^3)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^2\,(12+19\,m+8\,m^2+m^3)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-$$

$$e^2\,\Big(7\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+12\,\Big(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)\Big)\Big)\Big)\,\text{Gamma}[4+m]+$$

$$\Big(-6\,d^4\,e^4\,x^4+c^4\,\Big(-6\,e^3\,f\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+3\,e^2\,f^2\,m\,(1+m)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-$$

$$e\,f^3\,m\,(2+3\,m+m^2)\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-f^4\,(6+11\,m+6\,m^2+m^3)\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$6\,e^4\,\Big(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)+3\,c^3\,d\,e\,x\,\Big(-2\,e^2\,f\,m\,(4+m)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$e\,f^2\,m\,(4+5\,m+m^2)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^3\,(8+14\,m+7\,m^2+m^3)\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$2\,e^3\,\Big(-4+4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)-3\,c^2\,d^2\,e^2\,x^2$$

$$\Big(e\,f\,m\,(12+7\,m+m^2)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^2\,(12+19\,m+8\,m^2+m^3)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-$$

$$e^2\,\Big(7\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+12\,\Big(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)\Big)+$$

$$c\,d^3\,e^3\,x^3\,\Big(f\,(24+26\,m+9\,m^2+m^3)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+e\,\Big(26\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+9\,m^2$$

$$\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+24\,\Big(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)\Big)\Big)\,\text{Gamma}[5+m]\Big)\Big)+$$

$$\Big(a^2\,h\,x^2\,(c+d\,x)^{-3-m}\,(e+f\,x)^m\,\Big(c\,(4+m)\,(3\,e+f\,x)\,\Big(-2\,d^3\,e^3\,x^3+$$

$$c^3\,\Big(-2\,e^2\,f\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+e\,f^2\,m\,(1+m)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$

$$f^3\,(2+3\,m+m^2)\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+2\,e^3\,\Big(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)-$$

$$2\,c^2\,d\,e\,x\,\Big(e\,f\,m\,(3+m)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^2\,(3+4\,m+m^2)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-$$

$$e^2\,\Big(-3+3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)+c\,d^2\,e^2\,x^2\,\Big(f\,(6+5\,m+m^2)\,x$$

$$\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+e\,\Big(-6+6\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+5\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big)\Big)$$

$$\text{Gamma}[4+m] - \Big(2\,d^4\,e^4\,(1+m)\,x^4 - 2\,c\,d^3\,e^3\,x^3\,(-3\,e\,m + f\,(4+m)\,x) +$$

$$c^4\,\Big(e^2\,f^2\,(-5+m)\,m\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 2\,e\,f^3\,m\,(1+m)\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m +$$

$$f^4\,(2+3\,m+m^2)\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 6\,e^4\,\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right) -$$

$$2\,e^3\,f\,x\,\left(4+m-4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 2\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\Big) -$$

$$2\,c^3\,d\,e\,x\,\Big(2\,e\,f^2\,m\,(4+m)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + f^3\,(4+5\,m+m^2)\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m +$$

$$e^2\,f\,(4+m)\,x\,\left(3-3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right) -$$

$$e^3\,\left(-8+m+8\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 2\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\Big) +$$

$$c^2\,d^2\,e^2\,x^2\,\Big(f^2\,(12+7\,m+m^2)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 2\,e\,f\,(4+m)\,x$$

$$\left(-3+3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right) + e^2\,\Big(m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 12$$

$$\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right) + m\,\left(6+7\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\Big)\Big)\Big)\,\text{Gamma}[5+m]\Big)\Big) \Big/$$

$$\Big(c\,\Big((4+m)\,\Big(6\,d^4\,e^4\,x^4 + c^4\,\Big(6\,e^3\,f\,m\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m - 3\,e^2\,f^2\,m\,(1+m)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m +$$

$$3\,e\,f^3\,(1+m)\,(2+m)^2\,x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + f^4\,(6+11\,m+6\,m^2+m^3)\,x^4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m -$$

$$6\,e^4\,\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\Big) - 3\,c^3\,d\,e\,x\,\Big(-2\,e^2\,f\,m\,(4+m)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m +$$

$$e\,f^2\,(12+26\,m+17\,m^2+3\,m^3)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + f^3\,(8+14\,m+7\,m^2+m^3)$$

$$x^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 2\,e^3\,\left(-4+4\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\Big) -$$

$$c\,d^3\,e^3\,x^3\,\Big(f\,(24+26\,m+9\,m^2+m^3)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 3\,e\,\Big(-8+12\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m +$$

$$16\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 7\,m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + m^3\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\Big)\Big) + 3\,c^2\,d^2\,e^2\,x^2$$

$$\Big(e\,f\,(12+34\,m+19\,m^2+3\,m^3)\,x\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + f^2\,(12+19\,m+8\,m^2+m^3)\,x^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m -$$

$$e^2\,\left(7\,m\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + m^2\,\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m + 12\,\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)\Big)\Big)\,\text{Gamma}[4+m] +$$

$$\left(-6\,d^4\,e^4\,x^4+c^4\left(-6\,e^3\,f\,m\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+3\,e^2\,f^2\,m\,(1+m)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-\right.\right.$$
$$e\,f^3\,m\,\left(2+3\,m+m^2\right)\,x^3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-f^4\left(6+11\,m+6\,m^2+m^3\right)\,x^4\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$
$$\left.6\,e^4\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)+3\,c^3\,d\,e\,x\left(-2\,e^2\,f\,m\,(4+m)\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+\right.$$
$$e\,f^2\,m\,\left(4+5\,m+m^2\right)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^3\left(8+14\,m+7\,m^2+m^3\right)\,x^3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+$$
$$\left.2\,e^3\left(-4+4\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)-3\,c^2\,d^2\,e^2\,x^2$$
$$\left(e\,f\,m\,\left(12+7\,m+m^2\right)\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+f^2\left(12+19\,m+8\,m^2+m^3\right)\,x^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m-\right.$$
$$\left.e^2\left(7\,m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^2\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+12\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)\right)+$$
$$c\,d^3\,e^3\,x^3\left(f\,\left(24+26\,m+9\,m^2+m^3\right)\,x\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+e\left(26\,m\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+9\,m^2\right.\right.$$
$$\left.\left.\left.\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+m^3\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m+24\left(-1+\left(\frac{c\,(e+f\,x)}{e\,(c+d\,x)}\right)^m\right)\right)\right)\right)\,\text{Gamma}[5+m]\right)+$$
$$\left(a^2\,f^3\,g\,(e+f\,x)^{1+m}\left(c-\frac{d\,e}{f}+\frac{d\,(e+f\,x)}{f}\right)^{-m}\left(1+\frac{d\,(e+f\,x)}{\left(c-\frac{d\,e}{f}\right)\,f}\right)^m\right.$$
$$\left.\text{Hypergeometric2F1}\left[1+m,\,4+m,\,2+m,\,-\frac{d\,(e+f\,x)}{\left(c-\frac{d\,e}{f}\right)\,f}\right]\right)\Big/\left(\left(-d\,e+c\,f\right)^4\,(1+m)\right)$$

Problem 136: Result more than twice size of optimal antiderivative.

$$\int\frac{(A+B\,x)\,(c+d\,x)^n\,(e+f\,x)^p}{a+b\,x}\,dx$$

Optimal (type 6, 177 leaves, 5 steps):

$$-\left(\left((A b-a B)\,(c+d x)^{1+n}\,(e+f x)^{p}\left(\frac{d\,(e+f x)}{d e-c f}\right)^{-p}\right.\right.$$
$$\left.\left.\text{AppellF1}\left[1+n,\,1,\,-p,\,2+n,\,\frac{b\,(c+d x)}{b c-a d},\,-\frac{f\,(c+d x)}{d e-c f}\right]\right)\Big/\left(b\,(b c-a d)\,(1+n)\right)\right)-$$
$$\left(B\,(c+d x)^{1+n}\,(e+f x)^{1+p}\,\text{Hypergeometric2F1}\left[1,\,2+n+p,\,2+p,\,\frac{d\,(e+f x)}{d e-c f}\right]\right)\Big/$$
$$\left(b\,(d e-c f)\,(1+p)\right)$$

Result (type 6, 692 leaves) :

$$\frac{1}{b^2 f}\,(c+d x)^{n}\,(e+f x)^{p}$$
$$\left(\left(A b d f^2\,(-1+n+p)\,(a+b x)\,\text{AppellF1}\left[-n-p,\,-n,\,-p,\,1-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]\right)\Big/\right.$$
$$\left((n+p)\right.$$
$$\left(d f\,(-1+n+p)\,(a+b x)\,\text{AppellF1}\left[-n-p,\,-n,\,-p,\,1-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]+\right.$$
$$(-b c+a d)\,f\,n\,\text{AppellF1}\left[1-n-p,\,1-n,\,-p,\,2-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]+$$
$$\left.\left.d\,(-b e+a f)\,p\,\text{AppellF1}\left[1-n-p,\,-n,\,1-p,\,2-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]\right)\right)-$$
$$\left(a B d f^2\,(-1+n+p)\,(a+b x)\,\text{AppellF1}\left[-n-p,\,-n,\,-p,\,1-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]\right)\Big/$$
$$\left((n+p)\right.$$
$$\left(d f\,(-1+n+p)\,(a+b x)\,\text{AppellF1}\left[-n-p,\,-n,\,-p,\,1-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]+\right.$$
$$(-b c+a d)\,f\,n\,\text{AppellF1}\left[1-n-p,\,1-n,\,-p,\,2-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]+$$
$$\left.\left.d\,(-b e+a f)\,p\,\text{AppellF1}\left[1-n-p,\,-n,\,1-p,\,2-n-p,\,\frac{-b c+a d}{d\,(a+b x)},\,\frac{-b e+a f}{f\,(a+b x)}\right]\right)\right)+$$
$$\left.\frac{1}{1+p}b B\left(\frac{f\,(c+d x)}{-d e+c f}\right)^{-n}(e+f x)\,\text{Hypergeometric2F1}\left[-n,\,1+p,\,2+p,\,\frac{d\,(e+f x)}{d e-c f}\right]\right)$$

Problem 137: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int\frac{(a+b x)^{m}\,(A+B x)\,(c+d x)^{-m}}{e+f x}\,dx$$

Optimal (type 5, 233 leaves, 5 steps) :

$$-\frac{d\,(B\,e-A\,f)\,(a+b\,x)^{1+m}\,(c+d\,x)^{-m}}{(b\,c-a\,d)\,f^2\,m}-\frac{1}{f^2\,m}(B\,e-A\,f)\,(a+b\,x)^m\,(c+d\,x)^{-m}\,\text{Hypergeometric2F1}\left[1,\,-m,\,1-m,\,\frac{(b\,e-a\,f)\,(c+d\,x)}{(d\,e-c\,f)\,(a+b\,x)}\right]-\left((a\,B\,d\,f\,m-b\,(B\,d\,e-A\,d\,f+B\,c\,f\,m))\,(a+b\,x)^{1+m}\,(c+d\,x)^{-m}\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^m \text{Hypergeometric2F1}\left[m,\,1+m,\,2+m,\,-\frac{d\,(a+b\,x)}{b\,c-a\,d}\right]\right)\Big/\left(b\,(b\,c-a\,d)\,f^2\,m\,(1+m)\right)$$

Result (type 6, 627 leaves):

$$\Bigg((a+b\,x)^m\,(c+d\,x)^{-m}\Bigg(-B\,d\,(-b\,c+a\,d)\,e\,(b\,e-a\,f)\,(-1+m)\,(2+m)\,(a+b\,x)\,\text{AppellF1}\left[1+m,\,m,\,1,\,2+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+A\,d\,(-b\,c+a\,d)\,f\,(b\,e-a\,f)\,(-1+m)\,(2+m)\,(a+b\,x)\,\text{AppellF1}\left[1+m,\,m,\,1,\,2+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+b\,B\,(1+m)\left(\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^{-m}(c+d\,x)\,(e+f\,x)\Bigg((b\,c-a\,d)\,(b\,e-a\,f)\,(2+m)\,\text{AppellF1}\left[1+m,\,m,\,1,\,2+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+(a+b\,x)\left((-b\,c\,f+a\,d\,f)\,\text{AppellF1}\left[2+m,\,m,\,2,\,3+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+d\,(-b\,e+a\,f)\,m\,\text{AppellF1}\left[2+m,\,1+m,\,1,\,3+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]\right)\Bigg)\,\text{Hypergeometric2F1}\left[1-m,\,-m,\,2-m,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)\Bigg)\Bigg/\Bigg(b\,d\,f\,(1-m)\,(1+m)\,(e+f\,x)\Bigg((b\,c-a\,d)\,(b\,e-a\,f)\,(2+m)\,\text{AppellF1}\left[1+m,\,m,\,1,\,2+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+(a+b\,x)\left((-b\,c\,f+a\,d\,f)\,\text{AppellF1}\left[2+m,\,m,\,2,\,3+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+d\,(-b\,e+a\,f)\,m\,\text{AppellF1}\left[2+m,\,1+m,\,1,\,3+m,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]\right)\Bigg)\Bigg)$$

Problem 138: Result more than twice size of optimal antiderivative.

$$\int\frac{(A+B\,x)\,(c+d\,x)^n\,(e+f\,x)^p}{\sqrt{a+b\,x}}\,dx$$

Optimal (type 6, 250 leaves, 7 steps):

$$\frac{1}{b^2}2\,(A\,b-a\,B)\,\sqrt{a+b\,x}\,\,(c+d\,x)^n\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^{-n}(e+f\,x)^p\left(\frac{b\,(e+f\,x)}{b\,e-a\,f}\right)^{-p}$$
$$\text{AppellF1}\left[\frac{1}{2},\,-n,\,-p,\,\frac{3}{2},\,-\frac{d\,(a+b\,x)}{b\,c-a\,d},\,-\frac{f\,(a+b\,x)}{b\,e-a\,f}\right]+\frac{1}{3\,b^2}2\,B\,(a+b\,x)^{3/2}\,(c+d\,x)^n$$
$$\left(\frac{b\,(c+d\,x)}{b\,c-a\,d}\right)^{-n}(e+f\,x)^p\left(\frac{b\,(e+f\,x)}{b\,e-a\,f}\right)^{-p}\text{AppellF1}\left[\frac{3}{2},\,-n,\,-p,\,\frac{5}{2},\,-\frac{d\,(a+b\,x)}{b\,c-a\,d},\,-\frac{f\,(a+b\,x)}{b\,e-a\,f}\right]$$

Result (type 6, 551 leaves):

$$\frac{1}{3\,b^2}\,2\,(b\,c-a\,d)\,(b\,e-a\,f)\,\sqrt{a+b\,x}\,\,(c+d\,x)^n\,(e+f\,x)^p$$
$$\left(\left(9\,(A\,b-a\,B)\,\text{AppellF1}\left[\frac{1}{2},\,-n,\,-p,\,\frac{3}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]\right)\Big/\right.$$
$$\left(3\,(b\,c-a\,d)\,(b\,e-a\,f)\,\text{AppellF1}\left[\frac{1}{2},\,-n,\,-p,\,\frac{3}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]-\right.$$
$$2\,(a+b\,x)\left(d\,(-b\,e+a\,f)\,n\,\text{AppellF1}\left[\frac{3}{2},\,1-n,\,-p,\,\frac{5}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+\right.$$
$$\left.\left.(-b\,c+a\,d)\,f\,p\,\text{AppellF1}\left[\frac{3}{2},\,-n,\,1-p,\,\frac{5}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]\right)\right)+$$
$$\left(5\,B\,(a+b\,x)\,\text{AppellF1}\left[\frac{3}{2},\,-n,\,-p,\,\frac{5}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]\right)\Big/$$
$$\left(5\,(b\,c-a\,d)\,(b\,e-a\,f)\,\text{AppellF1}\left[\frac{3}{2},\,-n,\,-p,\,\frac{5}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]-\right.$$
$$2\,(a+b\,x)\left(d\,(-b\,e+a\,f)\,n\,\text{AppellF1}\left[\frac{5}{2},\,1-n,\,-p,\,\frac{7}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]+\right.$$
$$\left.\left.\left.(-b\,c+a\,d)\,f\,p\,\text{AppellF1}\left[\frac{5}{2},\,-n,\,1-p,\,\frac{7}{2},\,\frac{d\,(a+b\,x)}{-b\,c+a\,d},\,\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right]\right)\right)\right)$$

Problem 139: Unable to integrate problem.

$$\int (a+b\,x)^m\,(c+d\,x)^n\,(e+f\,x)^p\,(g+h\,x)^3\,dx$$

Optimal (type 6, 530 leaves, 31 steps):

$$\frac{1}{b^4 (1+m)}(b g-a h)^3 (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[1+m,-n,-p,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^4 (2+m)}3 h (b g-a h)^2 (a+b x)^{2+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[2+m,-n,-p,3+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^4 (3+m)}3 h^2 (b g-a h) (a+b x)^{3+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[3+m,-n,-p,4+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^4 (4+m)}h^3 (a+b x)^{4+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[4+m,-n,-p,5+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]$$

Result (type 8, 31 leaves):

$$\int (a+b x)^m (c+d x)^n (e+f x)^p (g+h x)^3 \, dx$$

Problem 140: Unable to integrate problem.

$$\int (a+b x)^m (c+d x)^n (e+f x)^p (g+h x)^2 \, dx$$

Optimal (type 6, 393 leaves, 15 steps):

$$\frac{1}{b^3 (1+m)}(b g-a h)^2 (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[1+m,-n,-p,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^3 (2+m)}2 h (b g-a h) (a+b x)^{2+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[2+m,-n,-p,3+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^3 (3+m)}h^2 (a+b x)^{3+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[3+m,-n,-p,4+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]$$

Result (type 8, 31 leaves):

$$\int (a+b x)^m (c+d x)^n (e+f x)^p (g+h x)^2 \, dx$$

Problem 141: Unable to integrate problem.

$$\int (a+b x)^m (c+d x)^n (e+f x)^p (g+h x) \, dx$$

Optimal (type 6, 256 leaves, 7 steps):

$$\frac{1}{b^2 (1+m)} (b g-a h) (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[1+m,-n,-p,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^2 (2+m)} h (a+b x)^{2+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[2+m,-n,-p,3+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]$$

Result (type 8, 29 leaves):

$$\int (a+b x)^m (c+d x)^n (e+f x)^p (g+h x) \, dx$$

Problem 142: Result more than twice size of optimal antiderivative.

$$\int (a+b x)^m (c+d x)^n (e+f x)^p \, dx$$

Optimal (type 6, 123 leaves, 3 steps):

$$\frac{1}{b (1+m)} (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^p \left(\frac{b (e+f x)}{b e-a f}\right)^{-p} \text{AppellF1}\left[1+m,-n,-p,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]$$

Result (type 6, 296 leaves):

$$\left((b c-a d) (b e-a f) (2+m) (a+b x)^{1+m} (c+d x)^n (e+f x)^p \text{AppellF1}\left[1+m,-n,-p,2+m,\frac{d (a+b x)}{-b c+a d},\frac{f (a+b x)}{-b e+a f}\right]\right) \Big/ \left(b (1+m) \left((b c-a d) (b e-a f) (2+m) \text{AppellF1}\left[1+m,-n,-p,2+m,\frac{d (a+b x)}{-b c+a d},\frac{f (a+b x)}{-b e+a f}\right]-(a+b x) \left(d (-b e+a f) n \text{AppellF1}\left[2+m,1-n,-p,3+m,\frac{d (a+b x)}{-b c+a d},\frac{f (a+b x)}{-b e+a f}\right]+(-b c+a d) f p \text{AppellF1}\left[2+m,-n,1-p,3+m,\frac{d (a+b x)}{-b c+a d},\frac{f (a+b x)}{-b e+a f}\right]\right)\right)\right)$$

Problem 144: Unable to integrate problem.

$$\int (a+b x)^m (A+B x) (c+d x)^n (e+f x)^{-m-n} \, dx$$

Optimal (type 6, 268 leaves, 7 steps):

$$\frac{1}{b^2 (1+m)} (A b-a B) (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^{-m-n} \left(\frac{b (e+f x)}{b e-a f}\right)^{m+n} \text{AppellF1}\left[1+m,-n,m+n,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]+\frac{1}{b^2 (2+m)} B (a+b x)^{2+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^{-m-n} \left(\frac{b (e+f x)}{b e-a f}\right)^{m+n} \text{AppellF1}\left[2+m,-n,m+n,3+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]$$

Result (type 8, 35 leaves):

$$\int (a+b x)^m (A+B x) (c+d x)^n (e+f x)^{-m-n} \, dx$$

Problem 145: Result more than twice size of optimal antiderivative.

$$\int (a+b x)^m (A+B x) (c+d x)^n (e+f x)^{-1-m-n} \, dx$$

Optimal (type 6, 283 leaves, 7 steps):

$$\frac{1}{b f (1+m)} B (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^{-m-n} \left(\frac{b (e+f x)}{b e-a f}\right)^{m+n} \text{AppellF1}\left[1+m,-n,m+n,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]-\left((B e-A f) (a+b x)^{1+m} (c+d x)^n \left(\frac{b (c+d x)}{b c-a d}\right)^{-n} (e+f x)^{-m-n} \left(\frac{b (e+f x)}{b e-a f}\right)^{m+n} \text{AppellF1}\left[1+m,-n,1+m+n,2+m,-\frac{d (a+b x)}{b c-a d},-\frac{f (a+b x)}{b e-a f}\right]\right) \Big/ (f (b e-a f) (1+m))$$

Result (type 6, 576 leaves):

$$\frac{1}{b(1+m)}(bc-ad)(be-af)(2+m)(a+bx)^{1+m}(c+dx)^n$$
$$(e+fx)^{-m-n}\left(\left(B\,\text{AppellF1}\left[1+m,-n,m+n,2+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]\right)\Big/\right.$$
$$\left(f\left((bc-ad)(be-af)(2+m)\,\text{AppellF1}\left[1+m,-n,m+n,2+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]-\right.\right.$$
$$(a+bx)\left(d(-be+af)\,n\,\text{AppellF1}\left[2+m,1-n,m+n,3+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]+\right.$$
$$\left.\left.\left.(bc-ad)\,f\,(m+n)\,\text{AppellF1}\left[2+m,-n,1+m+n,3+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]\right)\right)\right)+$$
$$\left(\left(A-\frac{Be}{f}\right)\text{AppellF1}\left[1+m,-n,1+m+n,2+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]\right)\Big/$$
$$\left((e+fx)\left((bc-ad)(be-af)(2+m)\right.\right.$$
$$\text{AppellF1}\left[1+m,-n,1+m+n,2+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]-(a+bx)$$
$$\left(d(-be+af)\,n\,\text{AppellF1}\left[2+m,1-n,1+m+n,3+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]+(bc-a\right.$$
$$\left.\left.\left.\left.d)\,f\,(1+m+n)\,\text{AppellF1}\left[2+m,-n,2+m+n,3+m,\frac{d(a+bx)}{-bc+ad},\frac{f(a+bx)}{-be+af}\right]\right)\right)\right)\right)$$

Problem 147: Result more than twice size of optimal antiderivative.

$$\int (a+bx)^m (A+Bx)(c+dx)^n (e+fx)^{-3-m-n}\,dx$$

Optimal (type 5, 263 leaves, 3 steps):

$$\frac{(Be-Af)(a+bx)^{1+m}(c+dx)^{1+n}(e+fx)^{-2-m-n}}{(be-af)(de-cf)(2+m+n)}-$$
$$\left((b(Bce(1+m)+A(cf(1+n)-de(2+m+n)))+\right.$$
$$a(Adf(1+m)+B(de(1+n)-cf(2+m+n))))$$
$$(a+bx)^{1+m}(c+dx)^n\left(\frac{(be-af)(c+dx)}{(bc-ad)(e+fx)}\right)^{-n}(e+fx)^{-1-m-n}$$
$$\left.\text{Hypergeometric2F1}\left[1+m,-n,2+m,-\frac{(de-cf)(a+bx)}{(bc-ad)(e+fx)}\right]\right)\Big/$$
$$\left((be-af)^2(de-cf)(1+m)(2+m+n)\right)$$

Result (type 5, 10 558 leaves):

$$\left(A(a+bx)^{1+2m}(c+dx)^{2n}\left(\frac{-bc-bdx}{-bc+ad}\right)^{-n}(e+fx)^{-6-2m-2n}\left(\frac{-be-bfx}{-be+af}\right)^{3+m+n}\left(1-\frac{d(a+bx)}{-bc+ad}\right)^n\right.$$

$$\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}\text{Gamma}[2+m]\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+$$

$$\frac{f\,(a+b\,x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{(b\,e-a\,f)\,\text{Gamma}[3+m]}+$$

$$\left((d\,e-c\,f)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)\right)\Big/$$

$$\left(b\,(1+m)\left(-\frac{1}{(-b\,e+a\,f)\,(1+m)}f\,(-2-m-n)\,(a+b\,x)^{1+m}\,(c+d\,x)^n\left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}\right.\right.$$

$$(e+f\,x)^{-3-m-n}\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^n\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-3-m-n}$$

$$\text{Gamma}[2+m]\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f\,(a+b\,x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\right.$$

$$\left.\text{Gamma}[3+m]\right)+\left((d\,e-c\,f)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+\right.\right.$$

$$\left.\left.m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)-$$

$$\frac{1}{(-b\,c+a\,d)\,(1+m)}d\,n\,(a+b\,x)^{1+m}\,(c+d\,x)^n\left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}(e+f\,x)^{-3-m-n}$$

$$\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^{-1+n}\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\left(f(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-\left(f(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)-$$

$$\frac{1}{(-b e+a f)(1+m)}f(3+m+n)(a+b x)^{1+m}(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-3-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{2+m+n}\left(1-\frac{d(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f(a+b x)}{-b e+a f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\left(f(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-\left(f(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$\frac{1}{b(1+m)}f(-3-m-n)(a+b x)^{1+m}(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-4-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}\left(1-\frac{d(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f(a+b x)}{-b e+a f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\left(\frac{2\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f\,(a+b\,x)\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,\text{Gamma}[3+m]\right)+\left(\left(d\,e-c\,f\right)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-\right.\right.$$

$$\left.\left.n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\right.\right.$$

$$\left.\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$\frac{1}{(-b\,c+a\,d)\,(1+m)}\,d\,n\,(a+b\,x)^{1+m}\,(c+d\,x)^n\left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-1-n}(e+f\,x)^{-3-m-n}$$

$$\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^n\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\left(\frac{2\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f\,(a+b\,x)\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,\text{Gamma}[3+m]\right)+\left(\left(d\,e-c\,f\right)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-\right.\right.$$

$$\left.\left.n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\right.\right.$$

$$\left.\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$\frac{1}{b\,(1+m)}\,d\,n\,(a+b\,x)^{1+m}\,(c+d\,x)^{-1+n}\left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}(e+f\,x)^{-3-m-n}\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}$$

$$\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^n\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}\text{Gamma}[2+m]$$

$$\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\left(f\,(a+b\,x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,\text{Gamma}[3+m]\right)+\left((d\,e-c\,f)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-\left(f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$(a+b\,x)^m\,(c+d\,x)^n\left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}(e+f\,x)^{-3-m-n}\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^n\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}\text{Gamma}[2+m]$$

$$\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{\text{Gamma}[3+m]}+\left(f\,(a+b\,x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,\text{Gamma}[3+m]\right)+\left((d\,e-c\,f)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-\left(f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$\frac{1}{b\,(1+m)}(a+b\,x)^{1+m}\,(c+d\,x)^n\left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}(e+f\,x)^{-3-m-n}\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^n\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}\text{Gamma}[2+m]$$

$$\left(\frac{b\,f\,\text{Hypergeometric2F1}\left[1,\,-n,\,3+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]}{(b\,e-a\,f)\,\text{Gamma}[3+m]}-\right.$$

$$\left(2\,n\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\right.$$

$$\left.\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((3+m)\,\text{Gamma}[3+m]\right)-$$

$$\left(m\,n\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\text{Hypergeometric2F1}\left[\right.\right.$$

$$\left.\left.2,\,1-n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((3+m)\,\text{Gamma}[3+m]\right)-$$

$$\left(f\,n\,(a+b\,x)\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\text{Hypergeometric2F1}\left[\right.\right.$$

$$\left.\left.2,\,1-n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(3+m)\,\text{Gamma}[3+m]\right)-$$

$$\left(d\,(d\,e-c\,f)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\right.\right.$$

$$\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)\,(c+d\,x)^2\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)+$$

$$\left(d\,f\,(-d\,e+c\,f)\,(a+b\,x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\right.\right.$$

$$\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)^2\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)+$$

$$\left(b\,(d\,e-c\,f)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(2\,b\,f\,(-d\,e+c\,f)\,(a+b\,x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\right.\right.$$

$$\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)+$$

$$\left(2\,(d\,e-c\,f)\,(1-n)\,(a+b\,x)\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\right.$$

$$\left.\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[3,\,2-n,\,5+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,(4+m)\,(c+d\,x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(2\,f\,(-d\,e+c\,f)\,(1-n)\,(a+b\,x)^2\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\right.$$

$$\text{Gamma}[1-n]\ \text{Hypergeometric2F1}\left[3,\ 2-n,\ 5+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]\Bigg)\Big/$$

$$\left(\left(b\,e-a\,f\right)^2\ (4+m)\ (c+d\,x)\ \text{Gamma}[4+m]\ \text{Gamma}[-n]\right)\Bigg)\Bigg)\Bigg)-$$

$$\Bigg(B\,e\ (a+b\,x)^{1+2\,m}\ (c+d\,x)^{2\,n}\ \left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}\ (e+f\,x)^{-6-2\,m-2\,n}$$

$$\left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}$$

$$\left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^{n}$$

$$\left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]$$

$$\left(\frac{2\ \text{Hypergeometric2F1}\left[1,\ -n,\ 3+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\ \text{Hypergeometric2F1}\left[1,\ -n,\ 3+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]}{\text{Gamma}[3+m]}+$$

$$\frac{f\ (a+b\,x)\ \text{Hypergeometric2F1}\left[1,\ -n,\ 3+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]}{(b\,e-a\,f)\ \text{Gamma}[3+m]}+$$

$$\Bigg((d\,e-c\,f)\ (a+b\,x)\ \text{Gamma}[1-n]\ \text{Hypergeometric2F1}\left[2,\ 1-n,\ 4+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]\Bigg)\Big/$$

$$\left((b\,e-a\,f)\ (c+d\,x)\ \text{Gamma}[4+m]\ \text{Gamma}[-n]\right)-$$

$$\Bigg(f\ (-d\,e+c\,f)\ (a+b\,x)^2\ \text{Gamma}[1-n]$$

$$\text{Hypergeometric2F1}\left[2,\ 1-n,\ 4+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]\Bigg)\Big/$$

$$\left(\left(b\,e-a\,f\right)^2\ (c+d\,x)\ \text{Gamma}[4+m]\ \text{Gamma}[-n]\right)\Bigg)\Bigg)\Big/$$

$$\Bigg(b\,f\ (1+m)\ \Bigg(-\frac{1}{(-b\,e+a\,f)\ (1+m)}\,f\ (-2-m-n)\ (a+b\,x)^{1+m}\ (c+d\,x)^{n}\ \left(\frac{-b\,c-b\,d\,x}{-b\,c+a\,d}\right)^{-n}$$

$$(e+f\,x)^{-3-m-n}\ \left(\frac{-b\,e-b\,f\,x}{-b\,e+a\,f}\right)^{3+m+n}\ \left(1-\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right)^{n}\ \left(1-\frac{f\,(a+b\,x)}{-b\,e+a\,f}\right)^{-3-m-n}$$

$$\text{Gamma}[2+m]\ \left(\frac{2\ \text{Hypergeometric2F1}\left[1,\ -n,\ 3+m,\ \frac{(d\,e-c\,f)\ (a+b\,x)}{(b\,e-a\,f)\ (c+d\,x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\Bigg)-$$

$$\frac{1}{(-b c+a d)(1+m)}d\,n\,(a+b x)^{1+m}(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-3-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}\left(1-\frac{d(a+b x)}{-b c+a d}\right)^{-1+n}\left(1-\frac{f(a+b x)}{-b e+a f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\Bigg(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\Bigg)-$$

$$\frac{1}{(-b e+a f)(1+m)}f(3+m+n)(a+b x)^{1+m}(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-3-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{2+m+n}\left(1-\frac{d(a+b x)}{-b c+a d}\right)^{n}\left(1-\frac{f(a+b x)}{-b e+a f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\Bigg(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f\,(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/$$

$$\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)\,(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-\right.\right.$$

$$\left.\left.n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)\,(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d e+c f)\,(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2\,(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\Bigg)+$$

$$\frac{1}{b\,(1+m)}\,f\,(-3-m-n)\,(a+b x)^{1+m}\,(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-4-m-n}$$

$$\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}\left(1-\frac{d\,(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f\,(a+b x)}{-b e+a f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\,\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f\,(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/$$

$$\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)\,(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-\right.\right.$$

$$\left.\left.n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)\,(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d e+c f)\,(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2\,(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\Bigg)+$$

$$\frac{1}{(-b c+a d)\,(1+m)}\,d\,n\,(a+b x)^{1+m}\,(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-1-n}(e+f x)^{-3-m-n}$$

$$\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}\left(1-\frac{d\,(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f\,(a+b x)}{-b e+a f}\right)^{-2-m-n}$$

$$\text{Gamma}[2+m]\,\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/$$

$$((b e-a f)\,\text{Gamma}[3+m])+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-\right.\right.$$

$$\left.\left.n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n])-$$

$$\left(f(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\left.\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$\frac{1}{b(1+m)}d\,n\,(a+b x)^{1+m}(c+d x)^{-1+n}\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-3-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}$$

$$\left(1-\frac{d(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f(a+b x)}{-b e+a f}\right)^{-2-m-n}\text{Gamma}[2+m]$$

$$\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/$$

$$((b e-a f)\,\text{Gamma}[3+m])+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-\right.\right.$$

$$\left.\left.n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n])-$$

$$\left(f(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\left.\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\right)+$$

$$(a+b x)^m(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-3-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}$$

$$\left(1-\frac{d(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f(a+b x)}{-b e+a f}\right)^{-2-m-n}\text{Gamma}[2+m]$$

$$\left(\frac{2\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+\right.$$

$$\frac{m\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{\text{Gamma}[3+m]}+$$

$$\left(f\,(a+b x)\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/$$

$$\left((b e-a f)\,\text{Gamma}[3+m]\right)+\left((d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,\right.\right.$$

$$\left.\left.1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)-$$

$$\left(f\,(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)^2(c+d x)\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)\Bigg)+$$

$$\frac{1}{b\,(1+m)}\,(a+b x)^{1+m}(c+d x)^n\left(\frac{-b c-b d x}{-b c+a d}\right)^{-n}(e+f x)^{-3-m-n}\left(\frac{-b e-b f x}{-b e+a f}\right)^{3+m+n}$$

$$\left(1-\frac{d\,(a+b x)}{-b c+a d}\right)^n\left(1-\frac{f\,(a+b x)}{-b e+a f}\right)^{-2-m-n}\text{Gamma}[2+m]$$

$$\left(\frac{b\,f\,\text{Hypergeometric2F1}\left[1,-n,3+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]}{(b e-a f)\,\text{Gamma}[3+m]}-\right.$$

$$\left(2\,n\left(-\frac{d\,(d e-c f)(a+b x)}{(b e-a f)(c+d x)^2}+\frac{b\,(d e-c f)}{(b e-a f)(c+d x)}\right)\right.$$

$$\left.\text{Hypergeometric2F1}\left[2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((3+m)\,\text{Gamma}[3+m]\right)-$$

$$\left(m\,n\left(-\frac{d\,(d e-c f)(a+b x)}{(b e-a f)(c+d x)^2}+\frac{b\,(d e-c f)}{(b e-a f)(c+d x)}\right)\text{Hypergeometric2F1}\left[\right.\right.$$

$$\left.\left.2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((3+m)\,\text{Gamma}[3+m]\right)-$$

$$\left(f\,n\,(a+b x)\left(-\frac{d\,(d e-c f)(a+b x)}{(b e-a f)(c+d x)^2}+\frac{b\,(d e-c f)}{(b e-a f)(c+d x)}\right)\text{Hypergeometric2F1}\left[\right.\right.$$

$$\left.\left.2,1-n,4+m,\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(3+m)\,\text{Gamma}[3+m]\right)-$$

$$\left(d\,(d e-c f)(a+b x)\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\frac{(d e-c f)(a+b x)}{(b e-a f)(c+d x)}\right]\right)\Big/\left((b e-a f)(c+d x)^2\,\text{Gamma}[4+m]\,\text{Gamma}[-n]\right)+$$

$$\left(d\,f\,(-d e+c f)(a+b x)^2\,\text{Gamma}[1-n]\,\text{Hypergeometric2F1}\left[2,1-n,4+m,\right.\right.$$

$$\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)^2\,\mathrm{Gamma}[4+m]\,\mathrm{Gamma}[-n]\right)+$$

$$\left(b\,(d\,e-c\,f)\,\mathrm{Gamma}[1-n]\,\mathrm{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,(c+d\,x)\,\mathrm{Gamma}[4+m]\,\mathrm{Gamma}[-n]\right)-$$

$$\left(2\,b\,f\,(-d\,e+c\,f)\,(a+b\,x)\,\mathrm{Gamma}[1-n]\,\mathrm{Hypergeometric2F1}\left[2,\,1-n,\,4+m,\right.\right.$$

$$\left.\left.\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/\left((b\,e-a\,f)^2\,(c+d\,x)\,\mathrm{Gamma}[4+m]\,\mathrm{Gamma}[-n]\right)+$$

$$\left(2\,(d\,e-c\,f)\,(1-n)\,(a+b\,x)\,\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\right.$$

$$\left.\mathrm{Gamma}[1-n]\,\mathrm{Hypergeometric2F1}\left[3,\,2-n,\,5+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,e-a\,f)\,(4+m)\,(c+d\,x)\,\mathrm{Gamma}[4+m]\,\mathrm{Gamma}[-n]\right)-$$

$$\left(2\,f\,(-d\,e+c\,f)\,(1-n)\,(a+b\,x)^2\,\left(-\frac{d\,(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)^2}+\frac{b\,(d\,e-c\,f)}{(b\,e-a\,f)\,(c+d\,x)}\right)\right.$$

$$\left.\mathrm{Gamma}[1-n]\,\mathrm{Hypergeometric2F1}\left[3,\,2-n,\,5+m,\,\frac{(d\,e-c\,f)\,(a+b\,x)}{(b\,e-a\,f)\,(c+d\,x)}\right]\right)\Big/$$

$$\left.\left.\left.\left((b\,e-a\,f)^2\,(4+m)\,(c+d\,x)\,\mathrm{Gamma}[4+m]\,\mathrm{Gamma}[-n]\right)\right)\right)\right)+$$

$$\left(B\,(a+b\,x)^{1+m}\,(c+d\,x)^n\,\left(\frac{(b\,e-a\,f)\,(c+d\,x)}{(b\,c-a\,d)\,(e+f\,x)}\right)^{-n}\right.$$

$$(e+f\,x)^{-1-m-n}$$

$$\mathrm{Hypergeometric2F1}\left[\right.$$

$$1+$$

$$m,\,-n,\,2+$$

$$m,$$

$$\left.\left.\frac{(-d\,e+c\,f)\,(a+b\,x)}{(b\,c-a\,d)\,(e+f\,x)}\right]\right)\Big/\left(f\right.$$

$$(b\,e-a\,f)\,(1+$$

$$\left.m)\right)$$

Problem 148: Attempted integration timed out after 120 seconds.

$$\int (a+b\,x)^m\,(A+B\,x)\,(c+d\,x)^n\,(e+f\,x)^{-4-m-n}\,dx$$

Optimal (type 5, 558 leaves, 4 steps) :

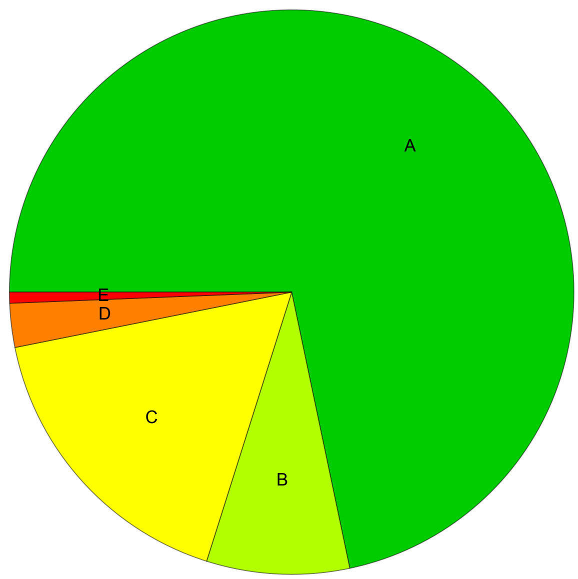
$$\frac{(B e-A f)\,(a+b x)^{1+m}\,(c+d x)^{1+n}\,(e+f x)^{-3-m-n}}{(b e-a f)\,(d e-c f)\,(3+m+n)}+$$
$$\Big(\big(a f\,(A d f\,(2+m)+B\,(d e\,(1+n)-c f\,(3+m+n)))+$$
$$b\,(B e\,(d e+c f\,(1+m))+A f\,(c f\,(2+n)-d e\,(4+m+n)))\big)\,(a+b x)^{1+m}$$
$$(c+d x)^{1+n}\,(e+f x)^{-2-m-n}\Big)\Big/\Big((b e-a f)^2\,(d e-c f)^2\,(2+m+n)\,(3+m+n)\Big)+$$
$$\frac{1}{(b e-a f)^3\,(d e-c f)^2\,(1+m)\,(2+m+n)\,(3+m+n)}$$
$$\Big((2+m+n)\,\big(a b c d f\,(B e-A f)+b d e\,((a B c f+A\,(b d e-b c f-a d f))\,(3+m+n)-$$
$$(B e-A f)\,(b c\,(1+m)+a d\,(1+n)))-(b c+a d)\,f$$
$$((a B c f+A\,(b d e-b c f-a d f))\,(3+m+n)-(B e-A f)\,(b c\,(1+m)+a d\,(1+n)))\big)-$$
$$(b c\,(1+m)+a d\,(1+n))\,\big(a f\,(A d f\,(2+m)+B\,(d e\,(1+n)-c f\,(3+m+n)))+$$
$$b\,(B e\,(d e+c f\,(1+m))+A f\,(c f\,(2+n)-d e\,(4+m+n)))\big)\Big)$$
$$(a+b x)^{1+m}\,(c+d x)^{n}\left(\frac{(b e-a f)\,(c+d x)}{(b c-a d)\,(e+f x)}\right)^{-n}(e+f x)^{-1-m-n}$$
$$\text{Hypergeometric2F1}\left[1+m,\,-n,\,2+m,\,-\frac{(d e-c f)\,(a+b x)}{(b c-a d)\,(e+f x)}\right]$$

Result (type 1, 1 leaves):

???

Summary of Integration Test Results

159 integration problems



A - 114 optimal antiderivatives

B - 13 more than twice size of optimal antiderivatives

C - 27 unnecessarily complex antiderivatives

D - 4 unable to integrate problems

E - 1 integration timeouts