Mathematica 11.3 Integration Test Results

Test results for the 502 problems in "6.1.1 (c+d x)^m (a+b sinh)^n.m"

Problem 25: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (c+d x)\,\mathrm{Csch}[a+b x]\,dx$$

Optimal (type 4, 50 leaves, 5 steps):

$$-\frac{2\,(c+d x)\,\mathrm{ArcTanh}\left[e^{a+b x}\right]}{b}-\frac{d\,\mathrm{PolyLog}\left[2,-e^{a+b x}\right]}{b^2}+\frac{d\,\mathrm{PolyLog}\left[2,e^{a+b x}\right]}{b^2}$$

Result (type 4, 174 leaves):

$$-\frac{c\,\mathrm{Log}\left[\mathrm{Cosh}\left[\frac{a}{2}+\frac{b x}{2}\right]\right]}{b}+\frac{c\,\mathrm{Log}\left[\mathrm{Sinh}\left[\frac{a}{2}+\frac{b x}{2}\right]\right]}{b}+\frac{1}{b^2}$$
$$d\left(-a\,\mathrm{Log}\left[\mathrm{Tanh}\left[\frac{1}{2}(a+b x)\right]\right]-i\left((i a+i b x)\left(\mathrm{Log}\left[1-e^{i(i a+i b x)}\right]-\mathrm{Log}\left[1+e^{i(i a+i b x)}\right]\right)+\right.\right.$$
$$\left.\left.i\left(\mathrm{PolyLog}\left[2,-e^{i(i a+i b x)}\right]-\mathrm{PolyLog}\left[2,e^{i(i a+i b x)}\right]\right)\right)\right)$$

Problem 29: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (c+d x)^2\,\mathrm{Csch}[a+b x]^2\,dx$$

Optimal (type 4, 74 leaves, 5 steps):

$$-\frac{(c+d x)^2}{b}-\frac{(c+d x)^2\,\mathrm{Coth}[a+b x]}{b}+\frac{2 d\,(c+d x)\,\mathrm{Log}\left[1-e^{2(a+b x)}\right]}{b^2}+\frac{d^2\,\mathrm{PolyLog}\left[2,e^{2(a+b x)}\right]}{b^3}$$

Result (type 4, 277 leaves):

$$-\left(\left(2\,c\,d\,\text{Csch}[a]\,\left(-b\,x\,\text{Cosh}[a]+\text{Log}[\text{Cosh}[b\,x]\,\text{Sinh}[a]+\text{Cosh}[a]\,\text{Sinh}[b\,x]]\,\text{Sinh}[a]\right)\right)\Big/\left(b^2\,\left(-\text{Cosh}[a]^2+\text{Sinh}[a]^2\right)\right)\right)+\frac{1}{b}\text{Csch}[a]\,\text{Csch}[a+b\,x]\,\left(c^2\,\text{Sinh}[b\,x]+2\,c\,d\,x\,\text{Sinh}[b\,x]+d^2\,x^2\,\text{Sinh}[b\,x]\right)+\left(d^2\,\text{Csch}[a]\,\text{Sech}[a]\,\left(-b^2\,e^{-\text{ArcTanh}[\text{Tanh}[a]]}\,x^2+\left(i\,\left(-b\,x\,\left(-\pi+2\,i\,\text{ArcTanh}[\text{Tanh}[a]]\right)-\pi\,\text{Log}\left[1+e^{2\,b\,x}\right]-2\,\left(i\,b\,x+i\,\text{ArcTanh}[\text{Tanh}[a]]\right)\,\text{Log}\left[1-e^{2\,i\,(i\,b\,x+i\,\text{ArcTanh}[\text{Tanh}[a]])}\right]+\pi\,\text{Log}[\text{Cosh}[b\,x]]+2\,i\,\text{ArcTanh}[\text{Tanh}[a]]\,\text{Log}[i\,\text{Sinh}[b\,x+\text{ArcTanh}[\text{Tanh}[a]]]]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,(i\,b\,x+i\,\text{ArcTanh}[\text{Tanh}[a]])}\right]\right)\,\text{Tanh}[a]\right)\Big/\left(\sqrt{1-\text{Tanh}[a]^2}\right)\right)\right)\Big/\left(b^3\,\sqrt{\text{Sech}[a]^2\,\left(\text{Cosh}[a]^2-\text{Sinh}[a]^2\right)}\right)$$

Problem 34: Result more than twice size of optimal antiderivative.

$$\int (c+d\,x)^2\,\text{Csch}[a+b\,x]^3\,dx$$

Optimal (type 4, 154 leaves, 9 steps):

$$\frac{(c+d\,x)^2\,\text{ArcTanh}\left[e^{a+b\,x}\right]}{b}-\frac{d^2\,\text{ArcTanh}[\text{Cosh}[a+b\,x]]}{b^3}-\frac{d\,(c+d\,x)\,\text{Csch}[a+b\,x]}{b^2}-\frac{(c+d\,x)^2\,\text{Coth}[a+b\,x]\,\text{Csch}[a+b\,x]}{2\,b}+\frac{d\,(c+d\,x)\,\text{PolyLog}\left[2,\,-e^{a+b\,x}\right]}{b^2}-\frac{d\,(c+d\,x)\,\text{PolyLog}\left[2,\,e^{a+b\,x}\right]}{b^2}-\frac{d^2\,\text{PolyLog}\left[3,\,-e^{a+b\,x}\right]}{b^3}+\frac{d^2\,\text{PolyLog}\left[3,\,e^{a+b\,x}\right]}{b^3}$$

Result (type 4, 420 leaves):

$$-\frac{d\,(c+d\,x)\,\text{Csch}[a]}{b^2}+\frac{\left(-c^2-2\,c\,d\,x-d^2\,x^2\right)\,\text{Csch}\left[\frac{a}{2}+\frac{b\,x}{2}\right]^2}{8\,b}+\frac{1}{2\,b^3}\left(-b^2\,c^2\,\text{Log}\left[1-e^{a+b\,x}\right]+2\,d^2\,\text{Log}\left[1-e^{a+b\,x}\right]-2\,b^2\,c\,d\,x\,\text{Log}\left[1-e^{a+b\,x}\right]-b^2\,d^2\,x^2\,\text{Log}\left[1-e^{a+b\,x}\right]+b^2\,c^2\,\text{Log}\left[1+e^{a+b\,x}\right]-2\,d^2\,\text{Log}\left[1+e^{a+b\,x}\right]+2\,b^2\,c\,d\,x\,\text{Log}\left[1+e^{a+b\,x}\right]+b^2\,d^2\,x^2\,\text{Log}\left[1+e^{a+b\,x}\right]+2\,b\,d\,(c+d\,x)\,\text{PolyLog}\left[2,\,-e^{a+b\,x}\right]-2\,b\,d\,(c+d\,x)\,\text{PolyLog}\left[2,\,e^{a+b\,x}\right]-2\,d^2\,\text{PolyLog}\left[3,\,-e^{a+b\,x}\right]+2\,d^2\,\text{PolyLog}\left[3,\,e^{a+b\,x}\right]\right)+\frac{\left(-c^2-2\,c\,d\,x-d^2\,x^2\right)\,\text{Sech}\left[\frac{a}{2}+\frac{b\,x}{2}\right]^2}{8\,b}+\frac{\text{Csch}\left[\frac{a}{2}\right]\,\text{Csch}\left[\frac{a}{2}+\frac{b\,x}{2}\right]\,\left(c\,d\,\text{Sinh}\left[\frac{b\,x}{2}\right]+d^2\,x\,\text{Sinh}\left[\frac{b\,x}{2}\right]\right)}{2\,b^2}+\frac{\text{Sech}\left[\frac{a}{2}\right]\,\text{Sech}\left[\frac{a}{2}+\frac{b\,x}{2}\right]\,\left(c\,d\,\text{Sinh}\left[\frac{b\,x}{2}\right]+d^2\,x\,\text{Sinh}\left[\frac{b\,x}{2}\right]\right)}{2\,b^2}$$

Problem 35: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int (c+d\,x)\,\text{Csch}[a+b\,x]^3\,dx$$

Optimal (type 4, 92 leaves, 6 steps):

$$\frac{(c+d\,x)\,\text{ArcTanh}\left[e^{a+b\,x}\right]}{b}-\frac{d\,\text{Csch}[a+b\,x]}{2\,b^2}-\frac{(c+d\,x)\,\text{Coth}[a+b\,x]\,\text{Csch}[a+b\,x]}{2\,b}+\frac{d\,\text{PolyLog}\left[2,-e^{a+b\,x}\right]}{2\,b^2}-\frac{d\,\text{PolyLog}\left[2,e^{a+b\,x}\right]}{2\,b^2}$$

Result (type 4, 332 leaves):

$$-\frac{d\,x\,\text{Csch}\left[\frac{a}{2}+\frac{b\,x}{2}\right]^2}{8\,b}-\frac{c\,\text{Csch}\left[\frac{1}{2}(a+b\,x)\right]^2}{8\,b}+\frac{c\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(a+b\,x)\right]\right]}{2\,b}-\frac{c\,\text{Log}\left[\text{Sinh}\left[\frac{1}{2}(a+b\,x)\right]\right]}{2\,b}-\frac{1}{2\,b^2}d\left(-a\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(a+b\,x)\right]\right]-i\left((i\,a+i\,b\,x)\left(\text{Log}\left[1-e^{i\,(i\,a+i\,b\,x)}\right]-\text{Log}\left[1+e^{i\,(i\,a+i\,b\,x)}\right]\right)+i\left(\text{PolyLog}\left[2,-e^{i\,(i\,a+i\,b\,x)}\right]-\text{PolyLog}\left[2,e^{i\,(i\,a+i\,b\,x)}\right]\right)\right)\right)-\frac{d\,x\,\text{Sech}\left[\frac{a}{2}+\frac{b\,x}{2}\right]^2}{8\,b}-\frac{c\,\text{Sech}\left[\frac{1}{2}(a+b\,x)\right]^2}{8\,b}+\frac{d\,\text{Csch}\left[\frac{a}{2}\right]\text{Csch}\left[\frac{a}{2}+\frac{b\,x}{2}\right]\text{Sinh}\left[\frac{b\,x}{2}\right]}{4\,b^2}+\frac{d\,\text{Sech}\left[\frac{a}{2}\right]\text{Sech}\left[\frac{a}{2}+\frac{b\,x}{2}\right]\text{Sinh}\left[\frac{b\,x}{2}\right]}{4\,b^2}$$

Problem 37: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[a+b\,x]^3}{(c+d\,x)^2}\,dx$$

Optimal (type 8, 19 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[a+b\,x]^3}{(c+d\,x)^2},x\right]$$

Result (type 1, 1 leaves):

???

Problem 45: Result more than twice size of optimal antiderivative.

$$\int(c+d\,x)^{5/2}\,\text{Sinh}[a+b\,x]^2\,dx$$

Optimal (type 4, 239 leaves, 10 steps):

$$-\frac{5\,d\,(c+d\,x)^{3/2}}{16\,b^2}-\frac{(c+d\,x)^{7/2}}{7\,d}+\frac{15\,d^{5/2}\,e^{-2\,a+\frac{2\,b\,c}{d}}\sqrt{\frac{\pi}{2}}\,\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{256\,b^{7/2}}-\frac{15\,d^{5/2}\,e^{2\,a-\frac{2\,b\,c}{d}}\sqrt{\frac{\pi}{2}}\,\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{256\,b^{7/2}}+\frac{(c+d\,x)^{5/2}\,\text{Cosh}[a+b\,x]\,\text{Sinh}[a+b\,x]}{2\,b}-\frac{5\,d\,(c+d\,x)^{3/2}\,\text{Sinh}[a+b\,x]^2}{8\,b^2}+\frac{15\,d^2\sqrt{c+d\,x}\,\text{Sinh}[2\,a+2\,b\,x]}{64\,b^3}$$

Result (type 4, 3531 leaves):

$$-\frac{(c+d x)^{7/2}}{7 d}+\frac{1}{2} c^2 \operatorname{Cosh}[2 a]\left(-\frac{1}{d} 2\left(\frac{d \sqrt{c+d x} \operatorname{Cosh}\left[\frac{2 b (c+d x)}{d}\right]}{4 b}-\frac{d^{3/2} \sqrt{\pi}\left(\operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]\right)}{16 \sqrt{2} b^{3/2}}\right)\right.$$

$$\operatorname{Sinh}\left[\frac{2 b c}{d}\right]+\frac{1}{d} 2 \operatorname{Cosh}\left[\frac{2 b c}{d}\right]$$

$$\left.\left(-\frac{d^{3/2} \sqrt{\pi}\left(-\operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]\right)}{16 \sqrt{2} b^{3/2}}+\frac{d \sqrt{c+d x} \operatorname{Sinh}\left[\frac{2 b (c+d x)}{d}\right]}{4 b}\right)\right)+$$

$$c^2 \operatorname{Cosh}[a] \operatorname{Sinh}[a]\left(\frac{1}{d} 2 \operatorname{Cosh}\left[\frac{2 b c}{d}\right]\left(\frac{d \sqrt{c+d x} \operatorname{Cosh}\left[\frac{2 b (c+d x)}{d}\right]}{4 b}-\right.\right.$$

$$\left.\frac{d^{3/2} \sqrt{\pi}\left(\operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]\right)}{16 \sqrt{2} b^{3/2}}\right)-\frac{1}{d} 2 \operatorname{Sinh}\left[\frac{2 b c}{d}\right]$$

$$\left.\left(-\frac{d^{3/2} \sqrt{\pi}\left(-\operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]\right)}{16 \sqrt{2} b^{3/2}}+\frac{d \sqrt{c+d x} \operatorname{Sinh}\left[\frac{2 b (c+d x)}{d}\right]}{4 b}\right)\right)+$$

$$c\, d \operatorname{Cosh}[2 a]\left(\frac{1}{d^2} 2 c\left(\frac{d \sqrt{c+d x} \operatorname{Cosh}\left[\frac{2 b (c+d x)}{d}\right]}{4 b}-\right.\right.$$

$$\left.\frac{d^{3/2} \sqrt{\pi}\left(\operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]\right)}{16 \sqrt{2} b^{3/2}}\right) \operatorname{Sinh}\left[\frac{2 b c}{d}\right]-$$

$$\frac{1}{d^2} 2 c \operatorname{Cosh}\left[\frac{2 b c}{d}\right]\left(-\frac{d^{3/2} \sqrt{\pi}\left(-\operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]\right)}{16 \sqrt{2} b^{3/2}}+\right.$$

$$\left.\frac{d \sqrt{c+d x} \operatorname{Sinh}\left[\frac{2 b (c+d x)}{d}\right]}{4 b}\right)+\frac{1}{32 \sqrt{2} b^{5/2} d}$$

$$\operatorname{Sinh}\left[\frac{2 b c}{d}\right]\left(3 d^{3/2} \sqrt{\pi} \operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]-3 d^{3/2} \sqrt{\pi} \operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+4 \sqrt{2}\right.$$

$$\left.\left.\sqrt{b} \sqrt{c+d x}\left(-4 b (c+d x) \operatorname{Cosh}\left[\frac{2 b (c+d x)}{d}\right]+3 d \operatorname{Sinh}\left[\frac{2 b (c+d x)}{d}\right]\right)\right)\right)+\frac{1}{32 \sqrt{2} b^{5/2} d}$$

$$\operatorname{Cosh}\left[\frac{2 b c}{d}\right]\left(3 d^{3/2} \sqrt{\pi} \operatorname{Erf}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+3 d^{3/2} \sqrt{\pi} \operatorname{Erfi}\left[\frac{\sqrt{2} \sqrt{b} \sqrt{c+d x}}{\sqrt{d}}\right]+\right.$$

$$4\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}\,\left(-3\,d\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]+4\,b\,(c+d\,x)\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\Bigg)\Bigg)+$$

$$2\,c\,d\,\text{Cosh}[a]\,\text{Sinh}[a]\,\left(-\frac{1}{d^2}2\,c\,\text{Cosh}\left[\frac{2\,b\,c}{d}\right]\left(\frac{d\,\sqrt{c+d\,x}\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{4\,b}-\right.\right.$$

$$\left.\frac{d^{3/2}\,\sqrt{\pi}\,\left(\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\right)}{16\,\sqrt{2}\,b^{3/2}}\right)+\frac{1}{d^2}$$

$$2\,c\,\text{Sinh}\left[\frac{2\,b\,c}{d}\right]\left(-\frac{d^{3/2}\,\sqrt{\pi}\,\left(-\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\right)}{16\,\sqrt{2}\,b^{3/2}}+\right.$$

$$\left.\frac{d\,\sqrt{c+d\,x}\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{4\,b}\right)+\frac{1}{32\,\sqrt{2}\,b^{5/2}\,d}$$

$$\text{Cosh}\left[\frac{2\,b\,c}{d}\right]\left(-3\,d^{3/2}\,\sqrt{\pi}\,\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+3\,d^{3/2}\,\sqrt{\pi}\,\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+4\,\sqrt{2}\right.$$

$$\left.\sqrt{b}\,\sqrt{c+d\,x}\,\left(4\,b\,(c+d\,x)\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]-3\,d\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\right)-\frac{1}{32\,\sqrt{2}\,b^{5/2}\,d}$$

$$\text{Sinh}\left[\frac{2\,b\,c}{d}\right]\left(3\,d^{3/2}\,\sqrt{\pi}\,\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+3\,d^{3/2}\,\sqrt{\pi}\,\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+\right.$$

$$4\,\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}\,\left(-3\,d\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]+4\,b\,(c+d\,x)\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\Bigg)\Bigg)+$$

$$\frac{1}{2}\,d^2\,\text{Cosh}[2\,a]\,\left(-\frac{1}{d^3}2\,c^2\,\left(\frac{d\,\sqrt{c+d\,x}\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{4\,b}-\right.\right.$$

$$\left.\frac{d^{3/2}\,\sqrt{\pi}\,\left(\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\right)}{16\,\sqrt{2}\,b^{3/2}}\right)\text{Sinh}\left[\frac{2\,b\,c}{d}\right]+$$

$$\frac{1}{d^3}2\,c^2\,\text{Cosh}\left[\frac{2\,b\,c}{d}\right]\left(-\frac{d^{3/2}\,\sqrt{\pi}\,\left(-\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\right)}{16\,\sqrt{2}\,b^{3/2}}+\right.$$

$$\left.\frac{d\,\sqrt{c+d\,x}\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{4\,b}\right)+\frac{1}{16\,\sqrt{2}\,b^{5/2}\,d^2}$$

$$c\,\text{Sinh}\left[\frac{2bc}{d}\right]\left(-3d^{3/2}\sqrt{\pi}\,\text{Erf}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+3d^{3/2}\sqrt{\pi}\,\text{Erfi}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+4\sqrt{2}\right.$$

$$\left.\sqrt{b}\sqrt{c+dx}\left(4b(c+dx)\,\text{Cosh}\left[\frac{2b(c+dx)}{d}\right]-3d\,\text{Sinh}\left[\frac{2b(c+dx)}{d}\right]\right)\right)\Bigg)-\frac{1}{16\sqrt{2}\,b^{5/2}d^2}$$

$$c\,\text{Cosh}\left[\frac{2bc}{d}\right]\left(3d^{3/2}\sqrt{\pi}\,\text{Erf}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+3d^{3/2}\sqrt{\pi}\,\text{Erfi}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+\right.$$

$$\left.4\sqrt{2}\sqrt{b}\sqrt{c+dx}\left(-3d\,\text{Cosh}\left[\frac{2b(c+dx)}{d}\right]+4b(c+dx)\,\text{Sinh}\left[\frac{2b(c+dx)}{d}\right]\right)\right)\Bigg)-$$

$$\left((c+dx)^{3/2}\,\text{Sinh}\left[\frac{2bc}{d}\right]\left(-15d^2\sqrt{\pi}\,\text{Erf}\left[\sqrt{2}\sqrt{\frac{b(c+dx)}{d}}\right]-\right.\right.$$

$$15d^2\sqrt{\pi}\,\text{Erfi}\left[\sqrt{2}\sqrt{\frac{b(c+dx)}{d}}\right]+4\sqrt{2}\sqrt{\frac{b(c+dx)}{d}}$$

$$\left.\left.\left(\left(15d^2+16b^2(c+dx)^2\right)\text{Cosh}\left[\frac{2b(c+dx)}{d}\right]-20bd(c+dx)\,\text{Sinh}\left[\frac{2b(c+dx)}{d}\right]\right)\right)\right)\Big/$$

$$\left(128\sqrt{2}\,b^2d^3\left(\frac{b(c+dx)}{d}\right)^{3/2}\right)+\frac{1}{128\sqrt{2}\,b^{7/2}d^2}\text{Cosh}\left[\frac{2bc}{d}\right]\left(15d^{5/2}\sqrt{\pi}\right.$$

$$\text{Erf}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]-15d^{5/2}\sqrt{\pi}\,\text{Erfi}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+4\sqrt{2}\sqrt{b}\sqrt{c+dx}$$

$$\left.\left(-20bd(c+dx)\,\text{Cosh}\left[\frac{2b(c+dx)}{d}\right]+\left(15d^2+16b^2(c+dx)^2\right)\text{Sinh}\left[\frac{2b(c+dx)}{d}\right]\right)\right)\Bigg)+$$

$$d^2\,\text{Cosh}[a]\,\text{Sinh}[a]\left(\frac{1}{d^3}2c^2\,\text{Cosh}\left[\frac{2bc}{d}\right]\left(\frac{d\sqrt{c+dx}\,\text{Cosh}\left[\frac{2b(c+dx)}{d}\right]}{4b}-\right.\right.$$

$$\left.\frac{d^{3/2}\sqrt{\pi}\left(\text{Erf}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+\text{Erfi}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]\right)}{16\sqrt{2}\,b^{3/2}}\right)-\frac{1}{d^3}$$

$$2c^2\,\text{Sinh}\left[\frac{2bc}{d}\right]\left(-\frac{d^{3/2}\sqrt{\pi}\left(-\text{Erf}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]+\text{Erfi}\left[\frac{\sqrt{2}\sqrt{b}\sqrt{c+dx}}{\sqrt{d}}\right]\right)}{16\sqrt{2}\,b^{3/2}}+\right.$$

$$\left.\frac{d\sqrt{c+dx}\,\text{Sinh}\left[\frac{2b(c+dx)}{d}\right]}{4b}\right)+\frac{1}{16\sqrt{2}\,b^{5/2}d^2}$$

$$c\,\text{Cosh}\left[\frac{2\,b\,c}{d}\right]\left(3\,d^{3/2}\sqrt{\pi}\;\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]-3\,d^{3/2}\sqrt{\pi}\;\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+4\sqrt{2}\right.$$
$$\left.\sqrt{b}\,\sqrt{c+d\,x}\left(-4\,b\,(c+d\,x)\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]+3\,d\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\right)+\frac{1}{16\sqrt{2}\,b^{5/2}\,d^2}$$
$$c\,\text{Sinh}\left[\frac{2\,b\,c}{d}\right]\left(3\,d^{3/2}\sqrt{\pi}\;\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+3\,d^{3/2}\sqrt{\pi}\;\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+\right.$$
$$\left.4\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}\left(-3\,d\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]+4\,b\,(c+d\,x)\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\right)+$$
$$\frac{1}{128\sqrt{2}\,b^{7/2}\,d^2}\text{Cosh}\left[\frac{2\,b\,c}{d}\right]\left(-15\,d^{5/2}\sqrt{\pi}\;\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]-\right.$$
$$15\,d^{5/2}\sqrt{\pi}\;\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+4\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}$$
$$\left.\left(\left(15\,d^2+16\,b^2\,(c+d\,x)^2\right)\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]-20\,b\,d\,(c+d\,x)\,\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\right)-$$
$$\frac{1}{128\sqrt{2}\,b^{7/2}\,d^2}\text{Sinh}\left[\frac{2\,b\,c}{d}\right]\left(15\,d^{5/2}\sqrt{\pi}\;\text{Erf}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]-\right.$$
$$15\,d^{5/2}\sqrt{\pi}\;\text{Erfi}\left[\frac{\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+4\sqrt{2}\,\sqrt{b}\,\sqrt{c+d\,x}$$
$$\left.\left(-20\,b\,d\,(c+d\,x)\,\text{Cosh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]+\left(15\,d^2+16\,b^2\,(c+d\,x)^2\right)\text{Sinh}\left[\frac{2\,b\,(c+d\,x)}{d}\right]\right)\right)\right)$$

Problem 58: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sinh}[a+b\,x]^3}{(c+d\,x)^{5/2}}\,dx$$

Optimal (type 4, 277 leaves, 18 steps):

$$\frac{b^{3/2}\,e^{-a+\frac{b\,c}{d}}\sqrt{\pi}\;\text{Erf}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{2\,d^{5/2}}-\frac{b^{3/2}\,e^{-3\,a+\frac{3\,b\,c}{d}}\sqrt{3\,\pi}\;\text{Erf}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{2\,d^{5/2}}-$$
$$\frac{b^{3/2}\,e^{a-\frac{b\,c}{d}}\sqrt{\pi}\;\text{Erfi}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{2\,d^{5/2}}+\frac{b^{3/2}\,e^{3\,a-\frac{3\,b\,c}{d}}\sqrt{3\,\pi}\;\text{Erfi}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{2\,d^{5/2}}-$$
$$\frac{4\,b\,\text{Cosh}[a+b\,x]\,\text{Sinh}[a+b\,x]^2}{d^2\sqrt{c+d\,x}}-\frac{2\,\text{Sinh}[a+b\,x]^3}{3\,d\,(c+d\,x)^{3/2}}$$

Result (type 4, 716 leaves):

$$\frac{1}{6\,d^{5/2}\,(c+d\,x)^{3/2}}\Bigg(6\,b\,c\,\sqrt{d}\,\text{Cosh}[a+b\,x]+6\,b\,d^{3/2}\,x\,\text{Cosh}[a+b\,x]-6\,b\,c\,\sqrt{d}\,\text{Cosh}[3\,(a+b\,x)]-$$
$$6\,b\,d^{3/2}\,x\,\text{Cosh}[3\,(a+b\,x)]-3\,b^{3/2}\,c\,\sqrt{\pi}\,\sqrt{c+d\,x}\,\text{Cosh}\left[a-\frac{b\,c}{d}\right]\text{Erfi}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]-$$
$$3\,b^{3/2}\,d\,\sqrt{\pi}\,x\,\sqrt{c+d\,x}\,\text{Cosh}\left[a-\frac{b\,c}{d}\right]\text{Erfi}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+$$
$$3\,b^{3/2}\,c\,\sqrt{3\,\pi}\,\sqrt{c+d\,x}\,\text{Cosh}\left[3\,a-\frac{3\,b\,c}{d}\right]\text{Erfi}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+$$
$$3\,b^{3/2}\,d\,\sqrt{3\,\pi}\,x\,\sqrt{c+d\,x}\,\text{Cosh}\left[3\,a-\frac{3\,b\,c}{d}\right]\text{Erfi}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]+$$
$$3\,b^{3/2}\,c\,\sqrt{3\,\pi}\,\sqrt{c+d\,x}\,\text{Erfi}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\text{Sinh}\left[3\,a-\frac{3\,b\,c}{d}\right]+$$
$$3\,b^{3/2}\,d\,\sqrt{3\,\pi}\,x\,\sqrt{c+d\,x}\,\text{Erfi}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\text{Sinh}\left[3\,a-\frac{3\,b\,c}{d}\right]+$$
$$3\,b^{3/2}\,\sqrt{3\,\pi}\,(c+d\,x)^{3/2}\,\text{Erf}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\left(-\text{Cosh}\left[3\,a-\frac{3\,b\,c}{d}\right]+\text{Sinh}\left[3\,a-\frac{3\,b\,c}{d}\right]\right)+$$
$$3\,b^{3/2}\,\sqrt{\pi}\,(c+d\,x)^{3/2}\,\text{Erf}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\left(\text{Cosh}\left[a-\frac{b\,c}{d}\right]-\text{Sinh}\left[a-\frac{b\,c}{d}\right]\right)-$$
$$3\,b^{3/2}\,c\,\sqrt{\pi}\,\sqrt{c+d\,x}\,\text{Erfi}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\text{Sinh}\left[a-\frac{b\,c}{d}\right]-3\,b^{3/2}\,d\,\sqrt{\pi}\,x\,\sqrt{c+d\,x}$$
$$\text{Erfi}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]\text{Sinh}\left[a-\frac{b\,c}{d}\right]+3\,d^{3/2}\,\text{Sinh}[a+b\,x]-d^{3/2}\,\text{Sinh}[3\,(a+b\,x)]\Bigg)$$

Problem 59: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sinh}[a+b\,x]^3}{(c+d\,x)^{7/2}}\,dx$$

Optimal (type 4, 331 leaves, 19 steps):

$$-\frac{b^{5/2}\,e^{-a+\frac{b\,c}{d}}\,\sqrt{\pi}\,\text{Erf}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{5\,d^{7/2}}+\frac{3\,b^{5/2}\,e^{-3\,a+\frac{3\,b\,c}{d}}\,\sqrt{3\,\pi}\,\text{Erf}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{5\,d^{7/2}}-$$
$$\frac{b^{5/2}\,e^{a-\frac{b\,c}{d}}\,\sqrt{\pi}\,\text{Erfi}\left[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{5\,d^{7/2}}+\frac{3\,b^{5/2}\,e^{3\,a-\frac{3\,b\,c}{d}}\,\sqrt{3\,\pi}\,\text{Erfi}\left[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\right]}{5\,d^{7/2}}-$$
$$\frac{16\,b^2\,\text{Sinh}[a+b\,x]}{5\,d^3\,\sqrt{c+d\,x}}-\frac{4\,b\,\text{Cosh}[a+b\,x]\,\text{Sinh}[a+b\,x]^2}{5\,d^2\,(c+d\,x)^{3/2}}-\frac{2\,\text{Sinh}[a+b\,x]^3}{5\,d\,(c+d\,x)^{5/2}}-\frac{24\,b^2\,\text{Sinh}[a+b\,x]^3}{5\,d^3\,\sqrt{c+d\,x}}$$

Result (type 4, 681 leaves):

$$\frac{1}{10\, d^{7/2}\, (c+d\,x)^{5/2}}\Bigg(2\,b\,c\,d^{3/2}\,\text{Cosh}[a+b\,x]+2\,b\,d^{5/2}\,x\,\text{Cosh}[a+b\,x]-2\,b\,c\,d^{3/2}\,\text{Cosh}[3\,(a+b\,x)]-$$
$$2\,b\,d^{5/2}\,x\,\text{Cosh}[3\,(a+b\,x)]-2\,b^{5/2}\,\sqrt{\pi}\,(c+d\,x)^{5/2}\,\text{Cosh}\Big[a-\frac{b\,c}{d}\Big]\,\text{Erf}\Big[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]+$$
$$6\,b^{5/2}\,\sqrt{3\,\pi}\,(c+d\,x)^{5/2}\,\text{Cosh}\Big[3\,a-\frac{3\,b\,c}{d}\Big]\,\text{Erf}\Big[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]-$$
$$2\,b^{5/2}\,\sqrt{\pi}\,(c+d\,x)^{5/2}\,\text{Cosh}\Big[a-\frac{b\,c}{d}\Big]\,\text{Erfi}\Big[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]+$$
$$6\,b^{5/2}\,\sqrt{3\,\pi}\,(c+d\,x)^{5/2}\,\text{Cosh}\Big[3\,a-\frac{3\,b\,c}{d}\Big]\,\text{Erfi}\Big[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]-$$
$$6\,b^{5/2}\,\sqrt{3\,\pi}\,(c+d\,x)^{5/2}\,\text{Erf}\Big[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]\,\text{Sinh}\Big[3\,a-\frac{3\,b\,c}{d}\Big]+$$
$$6\,b^{5/2}\,\sqrt{3\,\pi}\,(c+d\,x)^{5/2}\,\text{Erfi}\Big[\frac{\sqrt{3}\,\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]\,\text{Sinh}\Big[3\,a-\frac{3\,b\,c}{d}\Big]+$$
$$2\,b^{5/2}\,\sqrt{\pi}\,(c+d\,x)^{5/2}\,\text{Erf}\Big[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]\,\text{Sinh}\Big[a-\frac{b\,c}{d}\Big]-$$
$$2\,b^{5/2}\,\sqrt{\pi}\,(c+d\,x)^{5/2}\,\text{Erfi}\Big[\frac{\sqrt{b}\,\sqrt{c+d\,x}}{\sqrt{d}}\Big]\,\text{Sinh}\Big[a-\frac{b\,c}{d}\Big]+$$
$$4\,b^2\,c^2\,\sqrt{d}\,\text{Sinh}[a+b\,x]+3\,d^{5/2}\,\text{Sinh}[a+b\,x]+8\,b^2\,c\,d^{3/2}\,x\,\text{Sinh}[a+b\,x]+$$
$$4\,b^2\,d^{5/2}\,x^2\,\text{Sinh}[a+b\,x]-12\,b^2\,c^2\,\sqrt{d}\,\text{Sinh}[3\,(a+b\,x)]-d^{5/2}\,\text{Sinh}[3\,(a+b\,x)]-$$
$$24\,b^2\,c\,d^{3/2}\,x\,\text{Sinh}[3\,(a+b\,x)]-12\,b^2\,d^{5/2}\,x^2\,\text{Sinh}[3\,(a+b\,x)]\Bigg)$$

Problem 71: Result unnecessarily involves higher level functions.

$$\int\left(\frac{x^2}{\text{Sinh}[x]^{3/2}}-x^2\,\sqrt{\text{Sinh}[x]}\right)dx$$

Optimal (type 4, 58 leaves, 4 steps):

$$-\frac{2\,x^2\,\text{Cosh}[x]}{\sqrt{\text{Sinh}[x]}}+8\,x\,\sqrt{\text{Sinh}[x]}-\frac{16\,i\,\text{EllipticE}\Big[\frac{\pi}{4}-\frac{i\,x}{2},\,2\Big]\,\sqrt{\text{Sinh}[x]}}{\sqrt{i\,\text{Sinh}[x]}}$$

Result (type 5, 68 leaves):

$$-\frac{1}{\sqrt{\text{Sinh}[x]}}$$
$$2\,\Big(x^2\,\text{Cosh}[x]-4\,(-2+x)\,\text{Sinh}[x]-8\,\sqrt{2}\,\text{Hypergeometric2F1}\Big[-\frac{1}{4},\,\frac{1}{2},\,\frac{3}{4},\,\text{Cosh}[2\,x]+\text{Sinh}[2\,x]\Big]$$
$$(-\text{Cosh}[x]+\text{Sinh}[x])\,\sqrt{-\text{Sinh}[x]\,(\text{Cosh}[x]+\text{Sinh}[x])}\Big)$$

Problem 73: Attempted integration timed out after 120 seconds.

$$\int (c+d x)^m \operatorname{Sinh}[a+b x]^3 \, dx$$

Optimal (type 4, 237 leaves, 8 steps):

$$\frac{3^{-1-m} e^{3 a-\frac{3 b c}{d}} (c+d x)^m \left(-\frac{b (c+d x)}{d}\right)^{-m} \operatorname{Gamma}\left[1+m,-\frac{3 b (c+d x)}{d}\right]}{8 b}-\frac{3 e^{a-\frac{b c}{d}} (c+d x)^m \left(-\frac{b (c+d x)}{d}\right)^{-m} \operatorname{Gamma}\left[1+m,-\frac{b (c+d x)}{d}\right]}{8 b}-\frac{3 e^{-a+\frac{b c}{d}} (c+d x)^m \left(\frac{b (c+d x)}{d}\right)^{-m} \operatorname{Gamma}\left[1+m,\frac{b (c+d x)}{d}\right]}{8 b}+\frac{3^{-1-m} e^{-3 a+\frac{3 b c}{d}} (c+d x)^m \left(\frac{b (c+d x)}{d}\right)^{-m} \operatorname{Gamma}\left[1+m,\frac{3 b (c+d x)}{d}\right]}{8 b}$$

Result (type 1, 1 leaves):

???

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

$$\int \frac{c+d x}{a+i a \operatorname{Sinh}[e+f x]} \, dx$$

Optimal (type 3, 63 leaves, 3 steps):

$$-\frac{2 d \operatorname{Log}\left[\operatorname{Cosh}\left[\frac{e}{2}+\frac{i \pi}{4}+\frac{f x}{2}\right]\right]}{a f^2}+\frac{(c+d x) \operatorname{Tanh}\left[\frac{e}{2}+\frac{i \pi}{4}+\frac{f x}{2}\right]}{a f}$$

Result (type 3, 185 leaves):

$$\left(i d f x \operatorname{Cosh}\left[e+\frac{f x}{2}\right]+\operatorname{Cosh}\left[\frac{f x}{2}\right]\left(-2 i d \operatorname{ArcTan}\left[\operatorname{Sech}\left[e+\frac{f x}{2}\right] \operatorname{Sinh}\left[\frac{f x}{2}\right]\right]-d \operatorname{Log}[\operatorname{Cosh}[e+f x]]\right)+2 c f \operatorname{Sinh}\left[\frac{f x}{2}\right]+d f x \operatorname{Sinh}\left[\frac{f x}{2}\right]+2 d \operatorname{ArcTan}\left[\operatorname{Sech}\left[e+\frac{f x}{2}\right] \operatorname{Sinh}\left[\frac{f x}{2}\right]\right] \operatorname{Sinh}\left[e+\frac{f x}{2}\right]-i d \operatorname{Log}[\operatorname{Cosh}[e+f x]] \operatorname{Sinh}\left[e+\frac{f x}{2}\right]\right) \Big/ \left(a f^2 \left(\operatorname{Cosh}\left[\frac{e}{2}\right]+i \operatorname{Sinh}\left[\frac{e}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{1}{2}(e+f x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(e+f x)\right]\right)\right)$$

Problem 130: Result more than twice size of optimal antiderivative.

$$\int x^3 (a+i a \operatorname{Sinh}[c+d x])^{5/2} \, dx$$

Optimal (type 3, 638 leaves, 14 steps):

$$-\frac{265216\, a^2 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{1125\, d^4}-\frac{128\, a^2\, x^2 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{5\, d^2}-\frac{17408\, a^2\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]^2 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{3375\, d^4}-\frac{64\, a^2\, x^2\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]^2 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{15\, d^2}-\frac{384\, a^2\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]^4 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{625\, d^4}-\frac{48\, a^2\, x^2\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]^4 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{25\, d^2}+\frac{8704\, a^2\, x\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right] \text{Sinh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right] \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{1125\, d^3}+\frac{32\, a^2\, x^3\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right] \text{Sinh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right] \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{15\, d}+\frac{192\, a^2\, x\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]^3 \text{Sinh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right] \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{125\, d^3}+\frac{8\, a^2\, x^3\, \text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]^3 \text{Sinh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right] \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}}{5\, d}+\frac{132608\, a^2\, x \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}\, \text{Tanh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]}{1125\, d^3}+\frac{64\, a^2\, x^3 \sqrt{a+i\, a\, \text{Sinh}[c+d\, x]}\, \text{Tanh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d\, x}{2}\right]}{15\, d}$$

Result (type 3, 2918 leaves):

$$\frac{1}{d\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^5}$$
$$2\left(-\frac{\left(\frac{1}{135000}+\frac{i}{135000}\right)\text{Cosh}\left[5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]}{d^3}+\frac{\left(\frac{1}{135000}+\frac{i}{135000}\right)\text{Sinh}\left[5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]}{d^3}\right)$$
$$\left(1296\,i-3240\,i\,c+4050\,i\,c^2-3375\,i\,c^3+6480\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)-16200\,i\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)+\right.$$
$$20250\,i\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)+16200\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2-40500\,i\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2+27000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)^3-$$
$$50000\,\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+75000\,c\,\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-56250\,c^2\,\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$28125\,c^3\,\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-150000\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$225000\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-168750\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$225\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+337\,500\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$225\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)^3 \text{Cosh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-8\,100\,000\,i\,\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$4\,050\,000\,i\,c\,\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-1\,012\,500\,i\,c^2\,\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$168\,750\,i\,c^3\,\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-8\,100\,000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$4\,050\,000\,i\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-1\,012\,500\,i\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$4\,050\,000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+2\,025\,000\,i\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$1\,350\,000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)^3\text{Cosh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+8\,100\,000\,\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$4\,050\,000\,c\,\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+1\,012\,500\,c^2\,\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+168\,750\,c^3\,\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$8\,100\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-4\,050\,000\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$1\,012\,500\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+4\,050\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$2\,025\,000\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-1\,350\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)^3\text{Cosh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$50\,000\,i\,\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+75\,000\,i\,c\,\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+56\,250\,i\,c^2\,\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$28\,125\,i\,c^3\,\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-150\,000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$225\,000\,i\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-168\,750\,i\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$225\,000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+337\,500\,i\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$225\,000\,i\left(\frac{c}{2}+\frac{d\,x}{2}\right)^3\text{Cosh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-1296\,\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$3240\,c\,\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-4050\,c^2\,\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-3375\,c^3\,\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$6480\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+16\,200\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$20\,250\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-16\,200\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$40\,500\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+27\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)^3\text{Cosh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$50\,000\,\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+75\,000\,c\,\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-56\,250\,c^2\,\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$28\,125\,c^3\,\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-150\,000\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$

$$225\,000\,c\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-168\,750\,c^2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$

$$225000\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[2\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+337500\,c\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[2\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$225000\left(\frac{c}{2}+\frac{dx}{2}\right)^3\mathrm{Sinh}\left[2\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-8100000\,i\,\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$4050000\,i\,c\,\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-1012500\,i\,c^2\,\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$168750\,i\,c^3\,\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-8100000\,i\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$4050000\,i\,c\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-1012500\,i\,c^2\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$4050000\,i\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+2025000\,i\,c\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$1350000\,i\left(\frac{c}{2}+\frac{dx}{2}\right)^3\mathrm{Sinh}\left[4\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+8100000\,\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$4050000\,c\,\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+1012500\,c^2\,\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+168750\,c^3\,\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$8100000\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-4050000\,c\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$1012500\,c^2\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+4050000\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$2025000\,c\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-1350000\left(\frac{c}{2}+\frac{dx}{2}\right)^3\mathrm{Sinh}\left[6\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$50000\,i\,\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+75000\,i\,c\,\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+56250\,i\,c^2\,\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$28125\,i\,c^3\,\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-150000\,i\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$225000\,i\,c\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-168750\,i\,c^2\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$225000\,i\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+337500\,i\,c\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$225000\,i\left(\frac{c}{2}+\frac{dx}{2}\right)^3\mathrm{Sinh}\left[8\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-1296\,\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-3240\,c\,\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$4050\,c^2\,\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-3375\,c^3\,\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+6480\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$16200\,c\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+20250\,c^2\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$$
$$16200\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-40500\,c\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$$
$$\left.\left.27000\left(\frac{c}{2}+\frac{dx}{2}\right)^3\mathrm{Sinh}\left[10\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\right]\right)\left(a+i\,a\,\mathrm{Sinh}[c+dx]\right)^{5/2}$$

Problem 135: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a+i\,a\,\mathrm{Sinh}[c+dx]\right)^{5/2}}{x^3}\,dx$$

Optimal (type 4, 536 leaves, 21 steps):

$$-\frac{2 a^2 \text{Cosh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right]^4 \sqrt{a+i a \text{Sinh}[c+d x]}}{x^2}-\frac{25}{32} i a^2 d^2 \text{CoshIntegral}\left[\frac{5 d x}{2}\right] \text{Sech}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \text{Sinh}\left[\frac{5 c}{2}-\frac{i \pi}{4}\right] \sqrt{a+i a \text{Sinh}[c+d x]}+\frac{5}{16} i a^2 d^2 \text{CoshIntegral}\left[\frac{d x}{2}\right] \text{Sech}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \text{Sinh}\left[\frac{1}{4}(2 c-i \pi)\right] \sqrt{a+i a \text{Sinh}[c+d x]}+\frac{45}{32} i a^2 d^2 \text{CoshIntegral}\left[\frac{3 d x}{2}\right] \text{Sech}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \text{Sinh}\left[\frac{1}{4}(6 c+i \pi)\right] \sqrt{a+i a \text{Sinh}[c+d x]}-\frac{5 a^2 d \text{Cosh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right]^3 \text{Sinh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \sqrt{a+i a \text{Sinh}[c+d x]}}{x}+\frac{5}{16} i a^2 d^2 \text{Cosh}\left[\frac{1}{4}(2 c-i \pi)\right] \text{Sech}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \sqrt{a+i a \text{Sinh}[c+d x]} \text{SinhIntegral}\left[\frac{d x}{2}\right]+\frac{45}{32} i a^2 d^2 \text{Cosh}\left[\frac{1}{4}(6 c+i \pi)\right] \text{Sech}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \sqrt{a+i a \text{Sinh}[c+d x]} \text{SinhIntegral}\left[\frac{3 d x}{2}\right]-\frac{25}{32} i a^2 d^2 \text{Cosh}\left[\frac{5 c}{2}-\frac{i \pi}{4}\right] \text{Sech}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right] \sqrt{a+i a \text{Sinh}[c+d x]} \text{SinhIntegral}\left[\frac{5 d x}{2}\right]$$

Result (type 4, 4751 leaves):

$$\frac{1}{d\left(-c+2\left(\frac{c}{2}+\frac{d x}{2}\right)\right)^2\left(\text{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \text{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^5}$$
$$2\left(\left(\frac{1}{128}+\frac{i}{128}\right) \text{Cosh}\left[5\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-\left(\frac{1}{128}+\frac{i}{128}\right) \text{Sinh}\left[5\left(\frac{c}{2}+\frac{d x}{2}\right)\right]\right)(a+i a \text{Sinh}[c+d x])^{5/2}$$
$$\left(-4 i d^3-10 i c d^3+20 i d^3\left(\frac{c}{2}+\frac{d x}{2}\right)+20 d^3 \text{Cosh}\left[2\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+30 c d^3 \text{Cosh}\left[2\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-\right.$$
$$60 d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[2\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+40 i d^3 \text{Cosh}\left[4\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+20 i c d^3 \text{Cosh}\left[4\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-$$
$$40 i d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[4\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-40 d^3 \text{Cosh}\left[6\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+20 c d^3 \text{Cosh}\left[6\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-$$
$$40 d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[6\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-20 i d^3 \text{Cosh}\left[8\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+30 i c d^3 \text{Cosh}\left[8\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-$$
$$60 i d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[8\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+4 d^3 \text{Cosh}\left[10\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-10 c d^3 \text{Cosh}\left[10\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+$$
$$20 d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[10\left(\frac{c}{2}+\frac{d x}{2}\right)\right]-10 i c^2 d^3 \text{Cosh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d x}{2}\right)\right] \text{CoshIntegral}\left[\frac{d x}{2}\right]+$$
$$40 i c d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d x}{2}\right)\right] \text{CoshIntegral}\left[\frac{d x}{2}\right]-$$
$$40 i d^3\left(\frac{c}{2}+\frac{d x}{2}\right)^2 \text{Cosh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d x}{2}\right)\right] \text{CoshIntegral}\left[\frac{d x}{2}\right]+$$
$$10 c^2 d^3 \text{Cosh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d x}{2}\right)\right] \text{CoshIntegral}\left[\frac{d x}{2}\right]-40 c d^3\left(\frac{c}{2}+\frac{d x}{2}\right) \text{Cosh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d x}{2}\right)\right]$$
$$\text{CoshIntegral}\left[\frac{d x}{2}\right]+40 d^3\left(\frac{c}{2}+\frac{d x}{2}\right)^2 \text{Cosh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d x}{2}\right)\right] \text{CoshIntegral}\left[\frac{d x}{2}\right]-$$
$$45 c^2 d^3 \text{Cosh}\left[\frac{3 c}{2}-5\left(\frac{c}{2}+\frac{d x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{3 c}{2}+3\left(\frac{c}{2}+\frac{d x}{2}\right)\right]+$$

$180\, c\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Cosh}\left[\frac{3\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$180\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{Cosh}\left[\frac{3\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$45\, i\, c^2 d^3 \text{Cosh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$180\, i\, c\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Cosh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$180\, i\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{Cosh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$25\, i\, c^2 d^3 \text{Cosh}\left[\frac{5\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$100\, i\, c\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Cosh}\left[\frac{5\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$100\, i\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{Cosh}\left[\frac{5\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$25\, c^2 d^3 \text{Cosh}\left[\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$100\, c\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Cosh}\left[\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$100\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{Cosh}\left[\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$20\, d^3 \text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] + 30\, c\, d^3 \text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] - 60\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Sinh}\left[2\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$40\, i\, d^3 \text{Sinh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] + 20\, i\, c\, d^3 \text{Sinh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$40\, i\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Sinh}\left[4\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] - 40\, d^3 \text{Sinh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] + 20\, c\, d^3 \text{Sinh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$40\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Sinh}\left[6\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] - 20\, i\, d^3 \text{Sinh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] + 30\, i\, c\, d^3 \text{Sinh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$60\, i\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Sinh}\left[8\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] + 4\, d^3 \text{Sinh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] - 10\, c\, d^3 \text{Sinh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$20\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{Sinh}\left[10\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] + 10\, i\, c^2 d^3 \text{CoshIntegral}\left[\frac{d\,x}{2}\right] \text{Sinh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$40\, i\, c\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{CoshIntegral}\left[\frac{d\,x}{2}\right] \text{Sinh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$40\, i\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{CoshIntegral}\left[\frac{d\,x}{2}\right] \text{Sinh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$45\, c^2 d^3 \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{Sinh}\left[\frac{3\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$180\, c\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right) \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{Sinh}\left[\frac{3\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$
$180\, d^3 \left(\frac{c}{2}+\frac{d\,x}{2}\right)^2 \text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{Sinh}\left[\frac{3\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] -$
$25\, i\, c^2 d^3 \text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] \text{Sinh}\left[\frac{5\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right] +$

$$100\,i\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{5\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$
$$100\,i\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{5\,c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$10\,c^2\,d^3\,\text{CoshIntegral}\left[\frac{d\,x}{2}\right]\text{Sinh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$
$$40\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{CoshIntegral}\left[\frac{d\,x}{2}\right]\text{Sinh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$40\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{CoshIntegral}\left[\frac{d\,x}{2}\right]\text{Sinh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$45\,i\,c^2\,d^3\,\text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$
$$180\,i\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$180\,i\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{CoshIntegral}\left[-\frac{3\,c}{2}+3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$
$$25\,c^2\,d^3\,\text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$100\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]-$$
$$100\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{CoshIntegral}\left[-\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{Sinh}\left[\frac{5\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]+$$
$$10\,i\,c^2\,d^3\,\text{Cosh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]-$$
$$40\,i\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$
$$40\,i\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$
$$10\,c^2\,d^3\,\text{Cosh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]-$$
$$40\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Cosh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$
$$40\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Cosh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]-$$
$$10\,i\,c^2\,d^3\,\text{Sinh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$
$$40\,i\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Sinh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]-$$
$$40\,i\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Sinh}\left[\frac{c}{2}-5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$
$$10\,c^2\,d^3\,\text{Sinh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]-$$
$$40\,c\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\text{Sinh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$
$$40\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\text{Sinh}\left[\frac{c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\text{SinhIntegral}\left[\frac{d\,x}{2}\right]+$$

$25\,\mathrm{i}\,c^2 d^3 \,\mathrm{Cosh}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$100\,\mathrm{i}\,c\, d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Cosh}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$100\,\mathrm{i}\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Cosh}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$25\,c^2 d^3\,\mathrm{Cosh}\left[\frac{5c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$100\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Cosh}\left[\frac{5c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$100\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Cosh}\left[\frac{5c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$25\,\mathrm{i}\,c^2 d^3\,\mathrm{Sinh}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$100\,\mathrm{i}\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$100\,\mathrm{i}\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$25\,c^2 d^3\,\mathrm{Sinh}\left[\frac{5c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$100\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[\frac{5c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$100\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[\frac{5c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{5c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$45\,c^2 d^3\,\mathrm{Cosh}\left[\frac{3c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$180\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Cosh}\left[\frac{3c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$180\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Cosh}\left[\frac{3c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$45\,\mathrm{i}\,c^2 d^3\,\mathrm{Cosh}\left[\frac{3c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$180\,\mathrm{i}\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Cosh}\left[\frac{3c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$180\,\mathrm{i}\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Cosh}\left[\frac{3c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$45\,c^2 d^3\,\mathrm{Sinh}\left[\frac{3c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$180\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[\frac{3c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$180\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)^2\mathrm{Sinh}\left[\frac{3c}{2}-5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$45\,\mathrm{i}\,c^2 d^3\,\mathrm{Sinh}\left[\frac{3c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]+$

$180\,\mathrm{i}\,c\,d^3\left(\frac{c}{2}+\frac{dx}{2}\right)\mathrm{Sinh}\left[\frac{3c}{2}+5\left(\frac{c}{2}+\frac{dx}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3c}{2}-3\left(\frac{c}{2}+\frac{dx}{2}\right)\right]-$

$$180\,\mathrm{i}\,d^3\left(\frac{c}{2}+\frac{d\,x}{2}\right)^2\mathrm{Sinh}\left[\frac{3\,c}{2}+5\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\mathrm{SinhIntegral}\left[\frac{3\,c}{2}-3\left(\frac{c}{2}+\frac{d\,x}{2}\right)\right]\Bigg)$$

Problem 169: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 404 leaves, 12 steps):

$$\frac{(c+d\,x)^3\,\mathrm{Log}\left[1+\frac{b\,e^{e+f\,x}}{a-\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f}-\frac{(c+d\,x)^3\,\mathrm{Log}\left[1+\frac{b\,e^{e+f\,x}}{a+\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f}+\frac{3\,d\,(c+d\,x)^2\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{e+f\,x}}{a-\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f^2}-$$
$$\frac{3\,d\,(c+d\,x)^2\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{e+f\,x}}{a+\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f^2}-\frac{6\,d^2\,(c+d\,x)\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{e+f\,x}}{a-\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f^3}+$$
$$\frac{6\,d^2\,(c+d\,x)\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{e+f\,x}}{a+\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f^3}+\frac{6\,d^3\,\mathrm{PolyLog}\left[4,-\frac{b\,e^{e+f\,x}}{a-\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f^4}-\frac{6\,d^3\,\mathrm{PolyLog}\left[4,-\frac{b\,e^{e+f\,x}}{a+\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}\,f^4}$$

Result (type 4, 1031 leaves):

$$\frac{1}{\sqrt{-a^2-b^2}\,\sqrt{(a^2+b^2)\,e^{2e}}\,f^4}\left(2 c^3 \sqrt{(a^2+b^2)\,e^{2e}}\, f^3 \text{ArcTan}\left[\frac{a+b\,e^{e+f x}}{\sqrt{-a^2-b^2}}\right]+\right.$$
$$3\sqrt{-a^2-b^2}\; c^2 d\, e^e f^3 x \,\text{Log}\left[1+\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]+3\sqrt{-a^2-b^2}\; c\, d^2 e^e f^3 x^2$$
$$\text{Log}\left[1+\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]+\sqrt{-a^2-b^2}\; d^3 e^e f^3 x^3\,\text{Log}\left[1+\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]-$$
$$3\sqrt{-a^2-b^2}\; c^2 d\, e^e f^3 x\,\text{Log}\left[1+\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]-3\sqrt{-a^2-b^2}\; c\, d^2 e^e f^3 x^2$$
$$\text{Log}\left[1+\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]-\sqrt{-a^2-b^2}\; d^3 e^e f^3 x^3\,\text{Log}\left[1+\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]+$$
$$3\sqrt{-a^2-b^2}\; d\, e^e f^2 (c+d x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]-$$
$$3\sqrt{-a^2-b^2}\; d\, e^e f^2 (c+d x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]-$$
$$6\sqrt{-a^2-b^2}\; c\, d^2 e^e f\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]-$$
$$6\sqrt{-a^2-b^2}\; d^3 e^e f x\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]+$$
$$6\sqrt{-a^2-b^2}\; c\, d^2 e^e f\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]+$$
$$6\sqrt{-a^2-b^2}\; d^3 e^e f x\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]+$$
$$6\sqrt{-a^2-b^2}\; d^3 e^e\,\text{PolyLog}\left[4,-\frac{b\,e^{2e+f x}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]-$$
$$\left.6\sqrt{-a^2-b^2}\; d^3 e^e\,\text{PolyLog}\left[4,-\frac{b\,e^{2e+f x}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]\right)$$

Problem 170: Result more than twice size of optimal antiderivative.

$$\int \frac{(c+d x)^2}{a+b\,\text{Sinh}[e+f x]}\,dx$$

Optimal (type 4, 296 leaves, 10 steps):

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

Result (type 4, 601 leaves):

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

Problem 174: Result more than twice size of optimal antiderivative.

$$\int\frac{(c+d\,x)^2}{(a+b\,\text{Sinh}[e+f\,x])^2}\,dx$$

Optimal (type 4, 549 leaves, 18 steps):

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

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

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

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

$$\frac{2 a d^2 \text{PolyLog}\left[3,-\frac{b e^{e+f x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^{3/2} f^3}-\frac{b (c+d x)^2 \text{Cosh}[e+f x]}{\left(a^2+b^2\right) f (a+b \text{Sinh}[e+f x])}$$

Result (type 4, 5743 leaves):

$$\frac{1}{\left(a^2+b^2\right)\left(-1+e^{2 e}\right) f}$$

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

$$\frac{a c^2 e^e \text{ArcTan}\left[\frac{a+b e^{e+f x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{2 a c d e^{-e} \text{ArcTan}\left[\frac{a+b e^{e+f x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2} f}-\frac{2 a c d e^e \text{ArcTan}\left[\frac{a+b e^{e+f x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2} f}-$$

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

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

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

$$\left.\left.\frac{x \text{Log}\left[1+\frac{b e^{2 e+f x}}{a e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f}-\frac{\text{PolyLog}\left[2,-\frac{b e^{2 e+f x}}{a e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f^2}\right)\right/$$

$$\left(\frac{-a\,\mathbb{e}^{-e}-\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}-\frac{-a\,\mathbb{e}^{-e}+\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}\right)\Bigg)+$$

$$\left(\frac{x^2}{2\,\left(a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f}-\frac{\text{PolyLog}\left[2,-\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f^2}\right)\Bigg/$$

$$\left(\frac{-a\,\mathbb{e}^{-e}-\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}-\frac{-a\,\mathbb{e}^{-e}+\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}\right)\Bigg)+$$

$$2\,b\,d^2\,\mathbb{e}^{e}\,\left(-\left(\left(\left(\frac{x^2}{2\,\left(a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f}-\right.\right.\right.\right.$$

$$\left.\frac{\text{PolyLog}\left[2,-\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f^2}\right)\Bigg/$$

$$\left(\frac{-a\,\mathbb{e}^{-e}-\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}-\frac{-a\,\mathbb{e}^{-e}+\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}\right)\Bigg)+$$

$$\left(\frac{x^2}{2\,\left(a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f}-\frac{\text{PolyLog}\left[2,-\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f^2}\right)\Bigg/$$

$$\left(\frac{-a\,\mathbb{e}^{-e}-\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}-\frac{-a\,\mathbb{e}^{-e}+\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}\right)\Bigg)+$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f}-\frac{\text{PolyLog}\left[2,-\frac{b\,\mathbb{e}^{2\,e+f\,x}}{a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}}\right]}{\left(a\,\mathbb{e}^{e}-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,e}}\right)\,f^2}\right)\right)\Bigg/$$

$$\left(b\,\left(\frac{-a\,\mathbb{e}^{-e}-\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}-\frac{-a\,\mathbb{e}^{-e}+\mathbb{e}^{-2\,e}\,\sqrt{a^2\,\mathbb{e}^{2\,e}+b^2\,\mathbb{e}^{2\,e}}}{b}\right)\right)\Bigg)+$$

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

$$\left.\left.\frac{x \,\text{Log}\left[1+\frac{b\, e^{2 e+f x}}{a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f}-\frac{\text{PolyLog}\left[2,-\frac{b\, e^{2 e+f x}}{a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f^2}\right)\right) \Big/$$

$$\left.\left(b \left(\frac{-a\, e^{-e}-e^{-2 e} \sqrt{a^2 e^{2 e}+b^2 e^{2 e}}}{b}-\frac{-a\, e^{-e}+e^{-2 e} \sqrt{a^2 e^{2 e}+b^2 e^{2 e}}}{b}\right)\right)\right)-$$

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

$$\left.\left.\frac{x \,\text{Log}\left[1+\frac{b\, e^{2 e+f x}}{a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f}-\frac{\text{PolyLog}\left[2,-\frac{b\, e^{2 e+f x}}{a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f^2}\right)\right) \Big/$$

$$\left.\left(b \left(\frac{-a\, e^{-e}-e^{-2 e} \sqrt{a^2 e^{2 e}+b^2 e^{2 e}}}{b}-\frac{-a\, e^{-e}+e^{-2 e} \sqrt{a^2 e^{2 e}+b^2 e^{2 e}}}{b}\right)\right)\right)+$$

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

$$\left.\left.\frac{x \,\text{Log}\left[1+\frac{b\, e^{2 e+f x}}{a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f}-\frac{\text{PolyLog}\left[2,-\frac{b\, e^{2 e+f x}}{a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e+\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f^2}\right)\right) \Big/$$

$$\left.\left(b \left(\frac{-a\, e^{-e}-e^{-2 e} \sqrt{a^2 e^{2 e}+b^2 e^{2 e}}}{b}-\frac{-a\, e^{-e}+e^{-2 e} \sqrt{a^2 e^{2 e}+b^2 e^{2 e}}}{b}\right)\right)\right)-$$

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

$$\left.\left.\frac{x \,\text{Log}\left[1+\frac{b\, e^{2 e+f x}}{a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f}-\frac{\text{PolyLog}\left[2,-\frac{b\, e^{2 e+f x}}{a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}}\right]}{\left(a\, e^e-\sqrt{\left(a^2+b^2\right) e^{2 e}}\right) f^2}\right)\right) \Big/$$

$$\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}\right)\right)+$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}}\right]}{\left(a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}\right)f}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}}\right]}{\left(a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}\right)f^2}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}\right)\right)+$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^{e}-\sqrt{\left(a^2+b^2\right)e^{2e}}}\right]}{\left(a\,e^{e}-\sqrt{\left(a^2+b^2\right)e^{2e}}\right)f}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^{e}-\sqrt{\left(a^2+b^2\right)e^{2e}}}\right]}{\left(a\,e^{e}-\sqrt{\left(a^2+b^2\right)e^{2e}}\right)f^2}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}\right)\right)+$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}}\right]}{\left(a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}\right)f}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}}\right]}{\left(a\,e^{e}+\sqrt{\left(a^2+b^2\right)e^{2e}}\right)f^2}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2 e^{2e}+b^2 e^{2e}}}{b}\right)\right)-$$

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

$$\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}\right)f}-\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}\right)f^2}+$$

$$\left.\left.\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+fx}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}\right)f^3}\right)\right)\Big/$$

$$\left.\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}\right)\right)\right)+$$

$$\left(\left(-a\,e^{-e}-e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}\right)\left(\frac{x^3}{3\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)}-\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)f}-\right.\right.$$

$$\left.\left.\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)f^2}+\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+fx}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)f^3}\right)\right)\Big/$$

$$\left.\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}\right)\right)\right)+$$

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

$$\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}\right)f}-\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}\right)f^2}+$$

$$\left.\left.\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+fx}}{a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e-\sqrt{(a^2+b^2)\,e^{2e}}\right)f^3}\right)\right)\Big/$$

$$\left.\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}\right)\right)\right)+$$

$$\left(e^{2e}\left(-a\,e^{-e}-e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}\right)\left(\frac{x^3}{3\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)}-\right.\right.$$

$$\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2e+fx}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)f}-\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2e+fx}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)f^2}+$$

$$\left.\left.\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2e+fx}}{a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}}\right]}{\left(a\,e^e+\sqrt{(a^2+b^2)\,e^{2e}}\right)f^3}\right)\right)\Big/$$

$$\left.\left.\left(b\left(\frac{-a\,e^{-e}-e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}-\frac{-a\,e^{-e}+e^{-2e}\sqrt{a^2\,e^{2e}+b^2\,e^{2e}}}{b}\right)\right)\right)\right)+$$

$$\left(\text{Csch}\left[\frac{e}{2}\right]\text{Sech}\left[\frac{e}{2}\right]\left(a\,c^2\,\text{Cosh}[e]+2\,a\,c\,d\,x\,\text{Cosh}[e]+a\,d^2\,x^2\,\text{Cosh}[e]+\right.\right.$$
$$b\,c^2\,\text{Sinh}[f\,x]+$$
$$2\,b\,c\,d\,x\,\text{Sinh}[f\,x]+$$
$$\left.\left.b\,d^2\,x^2\,\text{Sinh}[f\,x]\right)\right)\Big/$$
$$\left(2\left(a^2+b^2\right)f\left(a+b\,\text{Sinh}[e+f\,x]\right)\right)$$

Problem 179: Attempted integration timed out after 120 seconds.

$$\int\frac{1}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])^3}\,dx$$

Optimal (type 8, 23 leaves, 0 steps):

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

Result (type 1, 1 leaves):

???

Problem 180: Attempted integration timed out after 120 seconds.

$$\int\frac{1}{(e+f\,x)^2\,(a+b\,\text{Sinh}[c+d\,x])^3}\,dx$$

Optimal (type 8, 23 leaves, 0 steps):

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

Result (type 1, 1 leaves):

???

Problem 183: Result more than twice size of optimal antiderivative.

$$\int (c+d x)^m (a+b \text{Sinh}[e+f x])^2 \, dx$$

Optimal (type 4, 281 leaves, 10 steps):

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

Result (type 4, 652 leaves):

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

Problem 189: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Sinh}[c+d\,x]}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 3, 90 leaves, 5 steps):

$$-\frac{i\,e\,x}{a}-\frac{i\,f\,x^2}{2\,a}-\frac{2\,i\,f\,\text{Log}\left[\text{Cosh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]\right]}{a\,d^2}+\frac{i\,(e+f\,x)\,\text{Tanh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]}{a\,d}$$

Result (type 3, 239 leaves):

$$\left(-2\,d\,f\,x\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-\right.$$
$$i\,\text{Cosh}\left[\frac{d\,x}{2}\right]\left(d^2\,x\,(2\,e+f\,x)+4\,i\,f\,\text{ArcTan}\left[\text{Sech}\left[c+\frac{d\,x}{2}\right]\text{Sinh}\left[\frac{d\,x}{2}\right]\right]+2\,f\,\text{Log}[\text{Cosh}[c+d\,x]]\right)+$$
$$4\,i\,d\,e\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,i\,d\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,d^2\,e\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+d^2\,f\,x^2\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+$$
$$\left.4\,i\,f\,\text{ArcTan}\left[\text{Sech}\left[c+\frac{d\,x}{2}\right]\text{Sinh}\left[\frac{d\,x}{2}\right]\right]\text{Sinh}\left[c+\frac{d\,x}{2}\right]+2\,f\,\text{Log}[\text{Cosh}[c+d\,x]]\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]\right)\Big/$$
$$\left(2\,a\,d^2\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)$$

Problem 190: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sinh}[c+d\,x]}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 3, 35 leaves, 2 steps):

$$-\frac{i\,x}{a}-\frac{\text{Cosh}[c+d\,x]}{d\,(a+i\,a\,\text{Sinh}[c+d\,x])}$$

Result (type 3, 84 leaves):

$$-\left(\left(\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)\left((c+d\,x)\,\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+\right.\right.\right.$$
$$\left.\left.\left.i\,(2\,i+c+d\,x)\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)\Big/\left(a\,d\,(-i+\text{Sinh}[c+d\,x])\right)\right)$$

Problem 193: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Sinh}[c+d\,x]^2}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 241 leaves, 14 steps):

$$-\frac{(e+f\,x)^3}{a\,d}+\frac{(e+f\,x)^4}{4\,a\,f}-\frac{6\,i\,f^2\,(e+f\,x)\,\text{Cosh}[c+d\,x]}{a\,d^3}-\frac{i\,(e+f\,x)^3\,\text{Cosh}[c+d\,x]}{a\,d}+$$
$$\frac{6\,f\,(e+f\,x)^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]}{a\,d^2}+\frac{12\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{a\,d^3}-\frac{12\,f^3\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]}{a\,d^4}+$$
$$\frac{6\,i\,f^3\,\text{Sinh}[c+d\,x]}{a\,d^4}+\frac{3\,i\,f\,(e+f\,x)^2\,\text{Sinh}[c+d\,x]}{a\,d^2}-\frac{(e+f\,x)^3\,\text{Tanh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]}{a\,d}$$

Result (type 4, 2976 leaves):

$$-\frac{1}{a\,d^4\,(-i+e^c)}2\,i\,f\left(d^2\left(-i\,d\,e^c\,x\,(3\,e^2+3\,e\,f\,x+f^2\,x^2)+3\,(1+i\,e^c)\,(e+f\,x)^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\right)+\right.$$
$$\left.6\,d\,(1+i\,e^c)\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]-6\,i\,(-i+e^c)\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]\right)+$$
$$\frac{1}{\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}\left(\frac{\text{Cosh}[c+d\,x]}{8\,a\,d^4}-\frac{\text{Sinh}[c+d\,x]}{8\,a\,d^4}\right)$$

$$\Big(-4\, i\, d^3 e^3 \text{Cosh}\left[\frac{d\,x}{2}\right] - 12\, i\, d^2 e^2 f \text{Cosh}\left[\frac{d\,x}{2}\right] - 24\, i\, d\, e\, f^2 \text{Cosh}\left[\frac{d\,x}{2}\right] - 24\, i\, f^3 \text{Cosh}\left[\frac{d\,x}{2}\right] -$$

$$4\, i\, d^4 e^3 x \text{Cosh}\left[\frac{d\,x}{2}\right] - 12\, i\, d^3 e^2 f\, x \text{Cosh}\left[\frac{d\,x}{2}\right] - 24\, i\, d^2 e\, f^2 x \text{Cosh}\left[\frac{d\,x}{2}\right] -$$

$$24\, i\, d\, f^3 x \text{Cosh}\left[\frac{d\,x}{2}\right] - 6\, i\, d^4 e^2 f\, x^2 \text{Cosh}\left[\frac{d\,x}{2}\right] - 12\, i\, d^3 e\, f^2 x^2 \text{Cosh}\left[\frac{d\,x}{2}\right] -$$

$$12\, i\, d^2 f^3 x^2 \text{Cosh}\left[\frac{d\,x}{2}\right] - 4\, i\, d^4 e\, f^2 x^3 \text{Cosh}\left[\frac{d\,x}{2}\right] - 4\, i\, d^3 f^3 x^3 \text{Cosh}\left[\frac{d\,x}{2}\right] - i\, d^4 f^3 x^4 \text{Cosh}\left[\frac{d\,x}{2}\right] +$$

$$8\, d^3 e^3 \text{Cosh}\left[c + \frac{d\,x}{2}\right] + 4\, d^4 e^3 x \text{Cosh}\left[c + \frac{d\,x}{2}\right] + 24\, d^3 e^2 f\, x \text{Cosh}\left[c + \frac{d\,x}{2}\right] +$$

$$6\, d^4 e^2 f\, x^2 \text{Cosh}\left[c + \frac{d\,x}{2}\right] + 24\, d^3 e\, f^2 x^2 \text{Cosh}\left[c + \frac{d\,x}{2}\right] + 4\, d^4 e\, f^2 x^3 \text{Cosh}\left[c + \frac{d\,x}{2}\right] +$$

$$8\, d^3 f^3 x^3 \text{Cosh}\left[c + \frac{d\,x}{2}\right] + d^4 f^3 x^4 \text{Cosh}\left[c + \frac{d\,x}{2}\right] - 10\, d^3 e^3 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] +$$

$$6\, d^2 e^2 f \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] - 12\, d\, e\, f^2 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] + 12\, f^3 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] +$$

$$4\, d^4 e^3 x \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] - 30\, d^3 e^2 f\, x \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] + 12\, d^2 e\, f^2 x \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] -$$

$$12\, d\, f^3 x \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] + 6\, d^4 e^2 f\, x^2 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] - 30\, d^3 e\, f^2 x^2 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] +$$

$$6\, d^2 f^3 x^2 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] + 4\, d^4 e\, f^2 x^3 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] - 10\, d^3 f^3 x^3 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] +$$

$$d^4 f^3 x^4 \text{Cosh}\left[c + \frac{3\,d\,x}{2}\right] - 2\, i\, d^3 e^3 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] + 6\, i\, d^2 e^2 f \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] -$$

$$12\, i\, d\, e\, f^2 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] + 12\, i\, f^3 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] + 4\, i\, d^4 e^3 x \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] -$$

$$6\, i\, d^3 e^2 f\, x \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] + 12\, i\, d^2 e\, f^2 x \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] - 12\, i\, d\, f^3 x \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] +$$

$$6\, i\, d^4 e^2 f\, x^2 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] - 6\, i\, d^3 e\, f^2 x^2 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] + 6\, i\, d^2 f^3 x^2 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] +$$

$$4\, i\, d^4 e\, f^2 x^3 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] - 2\, i\, d^3 f^3 x^3 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] + i\, d^4 f^3 x^4 \text{Cosh}\left[2\,c + \frac{3\,d\,x}{2}\right] -$$

$$2\, i\, d^3 e^3 \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] + 6\, i\, d^2 e^2 f \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] - 12\, i\, d\, e\, f^2 \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] +$$

$$12\, i\, f^3 \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] - 6\, i\, d^3 e^2 f\, x \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] + 12\, i\, d^2 e\, f^2 x \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] -$$

$$12\, i\, d\, f^3 x \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] - 6\, i\, d^3 e\, f^2 x^2 \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] + 6\, i\, d^2 f^3 x^2 \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] -$$

$$2\, i\, d^3 f^3 x^3 \text{Cosh}\left[2\,c + \frac{5\,d\,x}{2}\right] + 2\, d^3 e^3 \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] - 6\, d^2 e^2 f \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] +$$

$$12\, d\, e\, f^2 \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] - 12\, f^3 \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] + 6\, d^3 e^2 f\, x \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] -$$

$$12\, d^2 e\, f^2 x \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] + 12\, d\, f^3 x \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] + 6\, d^3 e\, f^2 x^2 \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] -$$

$$6\, d^2 f^3 x^2 \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] + 2\, d^3 f^3 x^3 \text{Cosh}\left[3\,c + \frac{5\,d\,x}{2}\right] - 4\, i\, d^4 e^3 x \text{Sinh}\left[\frac{d\,x}{2}\right] -$$

$6\,i\,d^4\,e^2\,f\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-4\,i\,d^4\,e\,f^2\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]-i\,d^4\,f^3\,x^4\,\text{Sinh}\left[\frac{d\,x}{2}\right]+12\,d^3\,e^3\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+$
$12\,d^2\,e^2\,f\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+24\,d\,e\,f^2\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+24\,f^3\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+4\,d^4\,e^3\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+$
$36\,d^3\,e^2\,f\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+24\,d^2\,e\,f^2\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+24\,d\,f^3\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+$
$6\,d^4\,e^2\,f\,x^2\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+36\,d^3\,e\,f^2\,x^2\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+12\,d^2\,f^3\,x^2\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+$
$4\,d^4\,e\,f^2\,x^3\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+12\,d^3\,f^3\,x^3\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+d^4\,f^3\,x^4\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]-$
$10\,d^3\,e^3\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+6\,d^2\,e^2\,f\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-12\,d\,e\,f^2\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+$
$12\,f^3\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+4\,d^4\,e^3\,x\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-30\,d^3\,e^2\,f\,x\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+$
$12\,d^2\,e\,f^2\,x\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-12\,d\,f^3\,x\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+6\,d^4\,e^2\,f\,x^2\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-$
$30\,d^3\,e\,f^2\,x^2\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+6\,d^2\,f^3\,x^2\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+4\,d^4\,e\,f^2\,x^3\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-$
$10\,d^3\,f^3\,x^3\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+d^4\,f^3\,x^4\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-2\,i\,d^3\,e^3\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+$
$6\,i\,d^2\,e^2\,f\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-12\,i\,d\,e\,f^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+12\,i\,f^3\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+$
$4\,i\,d^4\,e^3\,x\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-6\,i\,d^3\,e^2\,f\,x\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+12\,i\,d^2\,e\,f^2\,x\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-$
$12\,i\,d\,f^3\,x\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+6\,i\,d^4\,e^2\,f\,x^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-6\,i\,d^3\,e\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+$
$6\,i\,d^2\,f^3\,x^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+4\,i\,d^4\,e\,f^2\,x^3\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-2\,i\,d^3\,f^3\,x^3\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]+$
$i\,d^4\,f^3\,x^4\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-2\,i\,d^3\,e^3\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+6\,i\,d^2\,e^2\,f\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]-$
$12\,i\,d\,e\,f^2\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+12\,i\,f^3\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]-6\,i\,d^3\,e^2\,f\,x\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+$
$12\,i\,d^2\,e\,f^2\,x\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]-12\,i\,d\,f^3\,x\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]-6\,i\,d^3\,e\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+$
$6\,i\,d^2\,f^3\,x^2\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]-2\,i\,d^3\,f^3\,x^3\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+2\,d^3\,e^3\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]-$
$6\,d^2\,e^2\,f\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+12\,d\,e\,f^2\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]-12\,f^3\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+$
$6\,d^3\,e^2\,f\,x\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]-12\,d^2\,e\,f^2\,x\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+12\,d\,f^3\,x\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+$
$6\,d^3\,e\,f^2\,x^2\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]-6\,d^2\,f^3\,x^2\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+2\,d^3\,f^3\,x^3\,\text{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]\Big)\Big)$

Problem 197: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sinh}[c+d x]^2}{(e+f x) (a+i a \text{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c+d x]^2}{(e+f x) (a+i a \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 198: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sinh}[c+d x]^2}{(e+f x)^2 (a+i a \text{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c+d x]^2}{(e+f x)^2 (a+i a \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 199: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \text{Sinh}[c+d x]^3}{a+i a \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 393 leaves, 19 steps):

$$\frac{3 i e f^2 x}{4 a d^2}+\frac{3 i f^3 x^2}{8 a d^2}-\frac{i (e+f x)^3}{a d}+\frac{3 i (e+f x)^4}{8 a f}+\frac{6 f^2 (e+f x) \text{Cosh}[c+d x]}{a d^3}+\frac{(e+f x)^3 \text{Cosh}[c+d x]}{a d}+\frac{6 i f (e+f x)^2 \text{Log}\left[1+i e^{c+d x}\right]}{a d^2}+\frac{12 i f^2 (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]}{a d^3}-\frac{12 i f^3 \text{PolyLog}\left[3,-i e^{c+d x}\right]}{a d^4}-\frac{6 f^3 \text{Sinh}[c+d x]}{a d^4}-\frac{3 f (e+f x)^2 \text{Sinh}[c+d x]}{a d^2}-\frac{3 i f^2 (e+f x) \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 a d^3}-\frac{i (e+f x)^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 a d}+\frac{3 i f^3 \text{Sinh}[c+d x]^2}{8 a d^4}+\frac{3 i f (e+f x)^2 \text{Sinh}[c+d x]^2}{4 a d^2}-\frac{i (e+f x)^3 \text{Tanh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right]}{a d}$$

Result (type 4, 1210 leaves):

$$\frac{3\,i\,e^3\,x}{2\,a}+\frac{9\,i\,e^2\,f\,x^2}{4\,a}+\frac{3\,i\,e\,f^2\,x^3}{2\,a}+\frac{3\,i\,f^3\,x^4}{8\,a}+\frac{1}{a\,d^4\,\left(-i+e^c\right)}$$
$$2\,f\,\left(d^2\,\left(-i\,d\,e^c\,x\,\left(3\,e^2+3\,e\,f\,x+f^2\,x^2\right)+3\,\left(1+i\,e^c\right)\,\left(e+f\,x\right)^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\right)+\right.$$
$$\left.6\,d\,\left(1+i\,e^c\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]-6\,i\,\left(-i+e^c\right)\,f^2\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]\right)+$$
$$\left(\frac{f^3\,x^3\,\text{Cosh}[c]}{2\,a\,d}-\frac{f^3\,x^3\,\text{Sinh}[c]}{2\,a\,d}+\left(d^3\,e^3+3\,d^2\,e^2\,f+6\,d\,e\,f^2+6\,f^3\right)\,\left(\frac{\text{Cosh}[c]}{2\,a\,d^4}-\frac{\text{Sinh}[c]}{2\,a\,d^4}\right)+\right.$$
$$\left(d^2\,e^2\,f+2\,d\,e\,f^2+2\,f^3\right)\,\left(\frac{3\,x\,\text{Cosh}[c]}{2\,a\,d^3}-\frac{3\,x\,\text{Sinh}[c]}{2\,a\,d^3}\right)+$$
$$\left.\left(d\,e\,f^2+f^3\right)\,\left(\frac{3\,x^2\,\text{Cosh}[c]}{2\,a\,d^2}-\frac{3\,x^2\,\text{Sinh}[c]}{2\,a\,d^2}\right)\right)\,\left(\text{Cosh}[d\,x]-\text{Sinh}[d\,x]\right)+$$
$$\left(\frac{f^3\,x^3\,\text{Cosh}[c]}{2\,a\,d}+\frac{f^3\,x^3\,\text{Sinh}[c]}{2\,a\,d}+\left(d^3\,e^3-3\,d^2\,e^2\,f+6\,d\,e\,f^2-6\,f^3\right)\,\left(\frac{\text{Cosh}[c]}{2\,a\,d^4}+\frac{\text{Sinh}[c]}{2\,a\,d^4}\right)+\right.$$
$$\frac{3\,x^2\,\left(d\,e\,f^2\,\text{Cosh}[c]-f^3\,\text{Cosh}[c]+d\,e\,f^2\,\text{Sinh}[c]-f^3\,\text{Sinh}[c]\right)}{2\,a\,d^2}+\frac{1}{2\,a\,d^3}3\,x\,\left(d^2\,e^2\,f\,\text{Cosh}[c]-\right.$$
$$\left.\left.2\,d\,e\,f^2\,\text{Cosh}[c]+2\,f^3\,\text{Cosh}[c]+d^2\,e^2\,f\,\text{Sinh}[c]-2\,d\,e\,f^2\,\text{Sinh}[c]+2\,f^3\,\text{Sinh}[c]\right)\right)$$
$$\left(\text{Cosh}[d\,x]+\text{Sinh}[d\,x]\right)+\left(\frac{i\,f^3\,x^3\,\text{Cosh}[2\,c]}{8\,a\,d}-\frac{i\,f^3\,x^3\,\text{Sinh}[2\,c]}{8\,a\,d}+\right.$$
$$\left(4\,d^3\,e^3+6\,d^2\,e^2\,f+6\,d\,e\,f^2+3\,f^3\right)\,\left(\frac{i\,\text{Cosh}[2\,c]}{32\,a\,d^4}-\frac{i\,\text{Sinh}[2\,c]}{32\,a\,d^4}\right)+\left(2\,d^2\,e^2\,f+2\,d\,e\,f^2+f^3\right)$$
$$\left.\left(\frac{3\,i\,x\,\text{Cosh}[2\,c]}{16\,a\,d^3}-\frac{3\,i\,x\,\text{Sinh}[2\,c]}{16\,a\,d^3}\right)+\left(2\,d\,e\,f^2+f^3\right)\,\left(\frac{3\,i\,x^2\,\text{Cosh}[2\,c]}{16\,a\,d^2}-\frac{3\,i\,x^2\,\text{Sinh}[2\,c]}{16\,a\,d^2}\right)\right)$$
$$\left(\text{Cosh}[2\,d\,x]-\text{Sinh}[2\,d\,x]\right)+\left(-\frac{i\,f^3\,x^3\,\text{Cosh}[2\,c]}{8\,a\,d}-\frac{i\,f^3\,x^3\,\text{Sinh}[2\,c]}{8\,a\,d}+\right.$$
$$\left(4\,d^3\,e^3-6\,d^2\,e^2\,f+6\,d\,e\,f^2-3\,f^3\right)\,\left(-\frac{i\,\text{Cosh}[2\,c]}{32\,a\,d^4}-\frac{i\,\text{Sinh}[2\,c]}{32\,a\,d^4}\right)-\frac{1}{16\,a\,d^2}$$
$$3\,i\,x^2\,\left(2\,d\,e\,f^2\,\text{Cosh}[2\,c]-f^3\,\text{Cosh}[2\,c]+2\,d\,e\,f^2\,\text{Sinh}[2\,c]-f^3\,\text{Sinh}[2\,c]\right)-\frac{1}{16\,a\,d^3}$$
$$3\,i\,x\,\left(2\,d^2\,e^2\,f\,\text{Cosh}[2\,c]-2\,d\,e\,f^2\,\text{Cosh}[2\,c]+f^3\,\text{Cosh}[2\,c]+2\,d^2\,e^2\,f\,\text{Sinh}[2\,c]-\right.$$
$$\left.\left.2\,d\,e\,f^2\,\text{Sinh}[2\,c]+f^3\,\text{Sinh}[2\,c]\right)\right)\,\left(\text{Cosh}[2\,d\,x]+\text{Sinh}[2\,d\,x]\right)-$$
$$\left(2\,i\,\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)\right)\Big/$$
$$\left(a\,d\,\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\,\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)\right)$$

Problem 200: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(e+f\,x\right)^2\,\text{Sinh}[c+d\,x]^3}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 287 leaves, 17 steps):

$$\frac{i f^2 x}{4 a d^2}-\frac{i (e+f x)^2}{a d}+\frac{i (e+f x)^3}{2 a f}+\frac{2 f^2 \text{Cosh}[c+d x]}{a d^3}+\frac{(e+f x)^2 \text{Cosh}[c+d x]}{a d}+\frac{4 i f (e+f x) \text{Log}\left[1+i e^{c+d x}\right]}{a d^2}+\frac{4 i f^2 \text{PolyLog}\left[2,-i e^{c+d x}\right]}{a d^3}-\frac{2 f (e+f x) \text{Sinh}[c+d x]}{a d^2}-\frac{i f^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 a d^3}-\frac{i (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 a d}+\frac{i f (e+f x) \text{Sinh}[c+d x]^2}{2 a d^2}-\frac{i (e+f x)^2 \text{Tanh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right]}{a d}$$

Result (type 4, 2925 leaves):

$$\frac{1}{a d^3 \left(-i+e^c\right)}2 f \left(d \left(-i d e^c x (2 e+f x)+2 \left(1+i e^c\right) (e+f x) \text{Log}\left[1+i e^{c+d x}\right]\right)+2 \left(1+i e^c\right) f \text{PolyLog}\left[2,-i e^{c+d x}\right]\right)+\frac{1}{\left(\text{Cosh}\left[\frac{c}{2}\right]+i \text{Sinh}\left[\frac{c}{2}\right]\right) \left(\text{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \text{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}\left(\frac{\text{Cosh}[2 c+2 d x]}{32 a d^3}-\frac{\text{Sinh}[2 c+2 d x]}{32 a d^3}\right)$$

$$\left(-4 i d^2 e^2 \text{Cosh}\left[\frac{d x}{2}\right]-12 i d e f \text{Cosh}\left[\frac{d x}{2}\right]-14 i f^2 \text{Cosh}\left[\frac{d x}{2}\right]-8 i d^2 e f x \text{Cosh}\left[\frac{d x}{2}\right]-12 i d f^2 x \text{Cosh}\left[\frac{d x}{2}\right]-4 i d^2 f^2 x^2 \text{Cosh}\left[\frac{d x}{2}\right]+8 d^2 e^2 \text{Cosh}\left[c+\frac{d x}{2}\right]+16 d e f \text{Cosh}\left[c+\frac{d x}{2}\right]+16 f^2 \text{Cosh}\left[c+\frac{d x}{2}\right]+16 d^2 e f x \text{Cosh}\left[c+\frac{d x}{2}\right]+16 d f^2 x \text{Cosh}\left[c+\frac{d x}{2}\right]+8 d^2 f^2 x^2 \text{Cosh}\left[c+\frac{d x}{2}\right]+8 d^2 e^2 \text{Cosh}\left[c+\frac{3 d x}{2}\right]+16 d e f \text{Cosh}\left[c+\frac{3 d x}{2}\right]+16 f^2 \text{Cosh}\left[c+\frac{3 d x}{2}\right]+24 d^3 e^2 x \text{Cosh}\left[c+\frac{3 d x}{2}\right]+16 d^2 e f x \text{Cosh}\left[c+\frac{3 d x}{2}\right]+16 d f^2 x \text{Cosh}\left[c+\frac{3 d x}{2}\right]+24 d^3 e f x^2 \text{Cosh}\left[c+\frac{3 d x}{2}\right]+8 d^2 f^2 x^2 \text{Cosh}\left[c+\frac{3 d x}{2}\right]+8 d^3 f^2 x^3 \text{Cosh}\left[c+\frac{3 d x}{2}\right]+40 i d^2 e^2 \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+16 i d e f \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+16 i f^2 \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+24 i d^3 e^2 x \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+80 i d^2 e f x \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+16 i d f^2 x \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+24 i d^3 e f x^2 \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+40 i d^2 f^2 x^2 \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]+8 i d^3 f^2 x^3 \text{Cosh}\left[2 c+\frac{3 d x}{2}\right]-40 i d^2 e^2 \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]+16 i d e f \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]-16 i f^2 \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]+24 i d^3 e^2 x \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]-80 i d^2 e f x \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]+16 i d f^2 x \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]+24 i d^3 e f x^2 \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]-40 i d^2 f^2 x^2 \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]+8 i d^3 f^2 x^3 \text{Cosh}\left[2 c+\frac{5 d x}{2}\right]+8 d^2 e^2 \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]-16 d e f \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]+16 f^2 \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]-24 d^3 e^2 x \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]+16 d^2 e f x \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]-16 d f^2 x \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]-24 d^3 e f x^2 \text{Cosh}\left[3 c+\frac{5 d x}{2}\right]+$$

$$8 d^2 f^2 x^2 \operatorname{Cosh}\left[3 c+\frac{5 d x}{2}\right]-8 d^3 f^2 x^3 \operatorname{Cosh}\left[3 c+\frac{5 d x}{2}\right]+6 d^2 e^2 \operatorname{Cosh}\left[3 c+\frac{7 d x}{2}\right]-$$
$$14 d e f \operatorname{Cosh}\left[3 c+\frac{7 d x}{2}\right]+15 f^2 \operatorname{Cosh}\left[3 c+\frac{7 d x}{2}\right]+12 d^2 e f x \operatorname{Cosh}\left[3 c+\frac{7 d x}{2}\right]-$$
$$14 d f^2 x \operatorname{Cosh}\left[3 c+\frac{7 d x}{2}\right]+6 d^2 f^2 x^2 \operatorname{Cosh}\left[3 c+\frac{7 d x}{2}\right]+6 i d^2 e^2 \operatorname{Cosh}\left[4 c+\frac{7 d x}{2}\right]-$$
$$14 i d e f \operatorname{Cosh}\left[4 c+\frac{7 d x}{2}\right]+15 i f^2 \operatorname{Cosh}\left[4 c+\frac{7 d x}{2}\right]+12 i d^2 e f x \operatorname{Cosh}\left[4 c+\frac{7 d x}{2}\right]-$$
$$14 i d f^2 x \operatorname{Cosh}\left[4 c+\frac{7 d x}{2}\right]+6 i d^2 f^2 x^2 \operatorname{Cosh}\left[4 c+\frac{7 d x}{2}\right]-2 i d^2 e^2 \operatorname{Cosh}\left[4 c+\frac{9 d x}{2}\right]+$$
$$2 i d e f \operatorname{Cosh}\left[4 c+\frac{9 d x}{2}\right]-i f^2 \operatorname{Cosh}\left[4 c+\frac{9 d x}{2}\right]-4 i d^2 e f x \operatorname{Cosh}\left[4 c+\frac{9 d x}{2}\right]+$$
$$2 i d f^2 x \operatorname{Cosh}\left[4 c+\frac{9 d x}{2}\right]-2 i d^2 f^2 x^2 \operatorname{Cosh}\left[4 c+\frac{9 d x}{2}\right]+2 d^2 e^2 \operatorname{Cosh}\left[5 c+\frac{9 d x}{2}\right]-$$
$$2 d e f \operatorname{Cosh}\left[5 c+\frac{9 d x}{2}\right]+f^2 \operatorname{Cosh}\left[5 c+\frac{9 d x}{2}\right]+4 d^2 e f x \operatorname{Cosh}\left[5 c+\frac{9 d x}{2}\right]-$$
$$2 d f^2 x \operatorname{Cosh}\left[5 c+\frac{9 d x}{2}\right]+2 d^2 f^2 x^2 \operatorname{Cosh}\left[5 c+\frac{9 d x}{2}\right]-8 i d^2 e^2 \operatorname{Sinh}\left[\frac{d x}{2}\right]-$$
$$16 i d e f \operatorname{Sinh}\left[\frac{d x}{2}\right]-16 i f^2 \operatorname{Sinh}\left[\frac{d x}{2}\right]-16 i d^2 e f x \operatorname{Sinh}\left[\frac{d x}{2}\right]-16 i d f^2 x \operatorname{Sinh}\left[\frac{d x}{2}\right]-$$
$$8 i d^2 f^2 x^2 \operatorname{Sinh}\left[\frac{d x}{2}\right]+4 d^2 e^2 \operatorname{Sinh}\left[c+\frac{d x}{2}\right]+12 d e f \operatorname{Sinh}\left[c+\frac{d x}{2}\right]+14 f^2 \operatorname{Sinh}\left[c+\frac{d x}{2}\right]+$$
$$8 d^2 e f x \operatorname{Sinh}\left[c+\frac{d x}{2}\right]+12 d f^2 x \operatorname{Sinh}\left[c+\frac{d x}{2}\right]+4 d^2 f^2 x^2 \operatorname{Sinh}\left[c+\frac{d x}{2}\right]+$$
$$8 d^2 e^2 \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+16 d e f \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+16 f^2 \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+$$
$$24 d^3 e^2 x \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+16 d^2 e f x \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+16 d f^2 x \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+$$
$$24 d^3 e f x^2 \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+8 d^2 f^2 x^2 \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+8 d^3 f^2 x^3 \operatorname{Sinh}\left[c+\frac{3 d x}{2}\right]+$$
$$40 i d^2 e^2 \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+16 i d e f \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+16 i f^2 \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+$$
$$24 i d^3 e^2 x \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+80 i d^2 e f x \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+16 i d f^2 x \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+$$
$$24 i d^3 e f x^2 \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+40 i d^2 f^2 x^2 \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]+8 i d^3 f^2 x^3 \operatorname{Sinh}\left[2 c+\frac{3 d x}{2}\right]-$$
$$40 i d^2 e^2 \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]+16 i d e f \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]-16 i f^2 \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]+$$
$$24 i d^3 e^2 x \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]-80 i d^2 e f x \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]+16 i d f^2 x \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]+$$
$$24 i d^3 e f x^2 \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]-40 i d^2 f^2 x^2 \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]+8 i d^3 f^2 x^3 \operatorname{Sinh}\left[2 c+\frac{5 d x}{2}\right]+$$
$$8 d^2 e^2 \operatorname{Sinh}\left[3 c+\frac{5 d x}{2}\right]-16 d e f \operatorname{Sinh}\left[3 c+\frac{5 d x}{2}\right]+16 f^2 \operatorname{Sinh}\left[3 c+\frac{5 d x}{2}\right]-$$
$$24 d^3 e^2 x \operatorname{Sinh}\left[3 c+\frac{5 d x}{2}\right]+16 d^2 e f x \operatorname{Sinh}\left[3 c+\frac{5 d x}{2}\right]-16 d f^2 x \operatorname{Sinh}\left[3 c+\frac{5 d x}{2}\right]-$$

$$24\,d^3\,e\,f\,x^2\,\mathrm{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+8\,d^2\,f^2\,x^2\,\mathrm{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]-8\,d^3\,f^2\,x^3\,\mathrm{Sinh}\left[3\,c+\frac{5\,d\,x}{2}\right]+$$
$$6\,d^2\,e^2\,\mathrm{Sinh}\left[3\,c+\frac{7\,d\,x}{2}\right]-14\,d\,e\,f\,\mathrm{Sinh}\left[3\,c+\frac{7\,d\,x}{2}\right]+15\,f^2\,\mathrm{Sinh}\left[3\,c+\frac{7\,d\,x}{2}\right]+$$
$$12\,d^2\,e\,f\,x\,\mathrm{Sinh}\left[3\,c+\frac{7\,d\,x}{2}\right]-14\,d\,f^2\,x\,\mathrm{Sinh}\left[3\,c+\frac{7\,d\,x}{2}\right]+6\,d^2\,f^2\,x^2\,\mathrm{Sinh}\left[3\,c+\frac{7\,d\,x}{2}\right]+$$
$$6\,i\,d^2\,e^2\,\mathrm{Sinh}\left[4\,c+\frac{7\,d\,x}{2}\right]-14\,i\,d\,e\,f\,\mathrm{Sinh}\left[4\,c+\frac{7\,d\,x}{2}\right]+15\,i\,f^2\,\mathrm{Sinh}\left[4\,c+\frac{7\,d\,x}{2}\right]+$$
$$12\,i\,d^2\,e\,f\,x\,\mathrm{Sinh}\left[4\,c+\frac{7\,d\,x}{2}\right]-14\,i\,d\,f^2\,x\,\mathrm{Sinh}\left[4\,c+\frac{7\,d\,x}{2}\right]+6\,i\,d^2\,f^2\,x^2\,\mathrm{Sinh}\left[4\,c+\frac{7\,d\,x}{2}\right]-$$
$$2\,i\,d^2\,e^2\,\mathrm{Sinh}\left[4\,c+\frac{9\,d\,x}{2}\right]+2\,i\,d\,e\,f\,\mathrm{Sinh}\left[4\,c+\frac{9\,d\,x}{2}\right]-i\,f^2\,\mathrm{Sinh}\left[4\,c+\frac{9\,d\,x}{2}\right]-$$
$$4\,i\,d^2\,e\,f\,x\,\mathrm{Sinh}\left[4\,c+\frac{9\,d\,x}{2}\right]+2\,i\,d\,f^2\,x\,\mathrm{Sinh}\left[4\,c+\frac{9\,d\,x}{2}\right]-2\,i\,d^2\,f^2\,x^2\,\mathrm{Sinh}\left[4\,c+\frac{9\,d\,x}{2}\right]+$$
$$2\,d^2\,e^2\,\mathrm{Sinh}\left[5\,c+\frac{9\,d\,x}{2}\right]-2\,d\,e\,f\,\mathrm{Sinh}\left[5\,c+\frac{9\,d\,x}{2}\right]+f^2\,\mathrm{Sinh}\left[5\,c+\frac{9\,d\,x}{2}\right]+$$
$$4\,d^2\,e\,f\,x\,\mathrm{Sinh}\left[5\,c+\frac{9\,d\,x}{2}\right]-2\,d\,f^2\,x\,\mathrm{Sinh}\left[5\,c+\frac{9\,d\,x}{2}\right]+2\,d^2\,f^2\,x^2\,\mathrm{Sinh}\left[5\,c+\frac{9\,d\,x}{2}\right]\Bigg)$$

Problem 203: Attempted integration timed out after 120 seconds.

$$\int \frac{\mathrm{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+i\,a\,\mathrm{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\mathrm{Int}\left[\frac{\mathrm{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+i\,a\,\mathrm{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 204: Attempted integration timed out after 120 seconds.

$$\int \frac{\mathrm{Sinh}[c+d\,x]^3}{(e+f\,x)^2\,(a+i\,a\,\mathrm{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\mathrm{Int}\left[\frac{\mathrm{Sinh}[c+d\,x]^3}{(e+f\,x)^2\,(a+i\,a\,\mathrm{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 207: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)\,\text{Csch}[c+d x]}{a+i\,a\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 126 leaves, 9 steps):

$$-\frac{2\,(e+f x)\,\text{ArcTanh}\left[e^{c+d x}\right]}{a\,d}+\frac{2\,i\,f\,\text{Log}\left[\text{Cosh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d x}{2}\right]\right]}{a\,d^2}-\frac{f\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{a\,d^2}+\frac{f\,\text{PolyLog}\left[2,e^{c+d x}\right]}{a\,d^2}-\frac{i\,(e+f x)\,\text{Tanh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d x}{2}\right]}{a\,d}$$

Result (type 4, 345 leaves):

$$\frac{1}{d^2\,(a+i\,a\,\text{Sinh}[c+d x])}\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg(f\,(c+d x)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)-$$
$$2\,f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+$$
$$i\,f\,\text{Log}[\text{Cosh}[c+d x]]\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+$$
$$d\,e\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)-$$
$$c\,f\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+$$
$$f\left((c+d x)\left(\text{Log}\left[1-e^{-c-d x}\right]-\text{Log}\left[1+e^{-c-d x}\right]\right)+\text{PolyLog}\left[2,-e^{-c-d x}\right]-\text{PolyLog}\left[2,e^{-c-d x}\right]\right)$$
$$\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)-2\,i\,d\,(e+f x)\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\Bigg)$$

Problem 208: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Csch}[c+d x]}{a+i\,a\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 3, 41 leaves, 3 steps):

$$-\frac{\text{ArcTanh}[\text{Cosh}[c+d x]]}{a\,d}+\frac{\text{Cosh}[c+d x]}{d\,(a+i\,a\,\text{Sinh}[c+d x])}$$

Result (type 3, 121 leaves):

$$\left(\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)\right.$$
$$\left(i\,\text{Cosh}\left[\frac{1}{2}(c+d x)\right]\left(\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)+\right.$$
$$\left(-2-\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]\right]+\text{Log}\left[\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)$$
$$\left.\left.\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)\right)\Big/\left(a\,d\left(-i+\text{Sinh}[c+d x]\right)\right)$$

Problem 211: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f x)^3\,\text{Csch}[c+d x]^2}{a+i\,a\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 419 leaves, 24 steps):

$$-\frac{2(e+f x)^3}{a d}+\frac{2 i (e+f x)^3\,\text{ArcTanh}\left[e^{c+d x}\right]}{a d}-\frac{(e+f x)^3\,\text{Coth}[c+d x]}{a d}+$$
$$\frac{6 f (e+f x)^2\,\text{Log}\left[1+i\,e^{c+d x}\right]}{a d^2}+\frac{3 f (e+f x)^2\,\text{Log}\left[1-e^{2(c+d x)}\right]}{a d^2}+$$
$$\frac{3 i f (e+f x)^2\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{a d^2}+\frac{12 f^2 (e+f x)\,\text{PolyLog}\left[2,-i\,e^{c+d x}\right]}{a d^3}-$$
$$\frac{3 i f (e+f x)^2\,\text{PolyLog}\left[2,e^{c+d x}\right]}{a d^2}+\frac{3 f^2 (e+f x)\,\text{PolyLog}\left[2,e^{2(c+d x)}\right]}{a d^3}-$$
$$\frac{6 i f^2 (e+f x)\,\text{PolyLog}\left[3,-e^{c+d x}\right]}{a d^3}-\frac{12 f^3\,\text{PolyLog}\left[3,-i\,e^{c+d x}\right]}{a d^4}+$$
$$\frac{6 i f^2 (e+f x)\,\text{PolyLog}\left[3,e^{c+d x}\right]}{a d^3}-\frac{3 f^3\,\text{PolyLog}\left[3,e^{2(c+d x)}\right]}{2 a d^4}+$$
$$\frac{6 i f^3\,\text{PolyLog}\left[4,-e^{c+d x}\right]}{a d^4}-\frac{6 i f^3\,\text{PolyLog}\left[4,e^{c+d x}\right]}{a d^4}-\frac{(e+f x)^3\,\text{Tanh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d x}{2}\right]}{a d}$$

Result (type 4, 1005 leaves):

$$-\frac{1}{a\,d^4\left(-i+e^c\right)}2\,i\,f\left(d^2\left(-i\,d\,e^c\,x\left(3\,e^2+3\,e\,f\,x+f^2\,x^2\right)+3\left(1+i\,e^c\right)\left(e+f\,x\right)^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\right)+\right.$$
$$\left.6\,d\left(1+i\,e^c\right)f\left(e+f\,x\right)\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]-6\,i\left(-i+e^c\right)f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]\right)-$$
$$\frac{1}{2\,a\,d^4\left(-1+e^{2\,c}\right)}\left(12\,d^3\,e^2\,e^{2\,c}\,f\,x-12\,d^3\,e^2\left(-1+e^{2\,c}\right)f\,x+12\,d^3\,e\,f^2\,x^2+4\,d^3\,f^3\,x^3-\right.$$
$$4\,i\,d^3\,e^3\left(-1+e^{2\,c}\right)\text{ArcTanh}\left[e^{c+d\,x}\right]+6\,d^2\,e^2\left(-1+e^{2\,c}\right)f\left(2\,d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)+6\,i\,d^2\,e^2$$
$$\left(-1+e^{2\,c}\right)f\left(d\,x\left(\text{Log}\left[1-e^{c+d\,x}\right]-\text{Log}\left[1+e^{c+d\,x}\right]\right)-\text{PolyLog}\left[2,-e^{c+d\,x}\right]+\text{PolyLog}\left[2,e^{c+d\,x}\right]\right)+$$
$$6\,d\,e\left(-1+e^{2\,c}\right)f^2\left(2\,d\,x\left(d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]\right)+$$
$$6\,i\,d\,e\left(-1+e^{2\,c}\right)f^2\left(d^2\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]-d^2\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]-2\,d\,x\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]+\right.$$
$$\left.2\,d\,x\,\text{PolyLog}\left[2,e^{c+d\,x}\right]+2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]-2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]\right)+\left(-1+e^{2\,c}\right)f^3$$
$$\left(2\,d^2\,x^2\left(2\,d\,x-3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-6\,d\,x\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]+3\,\text{PolyLog}\left[3,e^{2\,(c+d\,x)}\right]\right)+$$
$$2\,i\left(-1+e^{2\,c}\right)f^3\left(d^3\,x^3\,\text{Log}\left[1-e^{c+d\,x}\right]-d^3\,x^3\,\text{Log}\left[1+e^{c+d\,x}\right]-3\,d^2\,x^2\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]+\right.$$
$$3\,d^2\,x^2\,\text{PolyLog}\left[2,e^{c+d\,x}\right]+6\,d\,x\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]-6\,d\,x\,\text{PolyLog}\left[3,e^{c+d\,x}\right]-$$
$$\left.\left.6\,\text{PolyLog}\left[4,-e^{c+d\,x}\right]+6\,\text{PolyLog}\left[4,e^{c+d\,x}\right]\right)\right)+\frac{1}{2\,a\,d}\text{Sech}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(-e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]-3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+$$
$$\frac{1}{2\,a\,d}\text{Csch}\left[\frac{c}{2}\right]\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)-$$
$$\left(2\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)\right)\Big/$$
$$\left(a\,d\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)\right)$$

Problem 212: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(e+f\,x\right)^2\,\text{Csch}\left[c+d\,x\right]^2}{a+i\,a\,\text{Sinh}\left[c+d\,x\right]}\,dx$$

Optimal (type 4, 296 leaves, 20 steps):

$$-\frac{2\left(e+f\,x\right)^2}{a\,d}+\frac{2\,i\left(e+f\,x\right)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{\left(e+f\,x\right)^2\,\text{Coth}\left[c+d\,x\right]}{a\,d}+$$
$$\frac{4\,f\left(e+f\,x\right)\text{Log}\left[1+i\,e^{c+d\,x}\right]}{a\,d^2}+\frac{2\,f\left(e+f\,x\right)\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a\,d^2}+\frac{2\,i\,f\left(e+f\,x\right)\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a\,d^2}+$$
$$\frac{4\,f^2\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{a\,d^3}-\frac{2\,i\,f\left(e+f\,x\right)\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a\,d^2}+\frac{f^2\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]}{a\,d^3}-$$
$$\frac{2\,i\,f^2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a\,d^3}+\frac{2\,i\,f^2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a\,d^3}-\frac{\left(e+f\,x\right)^2\,\text{Tanh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]}{a\,d}$$

Result (type 4, 659 leaves):

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

$$\frac{1}{a\,d\,(-1+e^{2\,c})}\Bigg(-4\,e\,e^{2\,c}\,f\,x+4\,e\,(-1+e^{2\,c})\,f\,x-2\,e^{2\,c}\,f^2\,x^2+2\,(-1+e^{2\,c})\,f^2\,x^2+$$
$$2\,i\,e^2\,(-1+e^{2\,c})\,\text{ArcTanh}\left[e^{c+d\,x}\right]-\frac{2\,e\,(-1+e^{2\,c})\,f\,\left(2\,d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)}{d}+\frac{1}{d}2\,i\,e\,(-1+e^{2\,c})$$
$$f\,\left(d\,x\,\left(-\text{Log}\left[1-e^{c+d\,x}\right]+\text{Log}\left[1+e^{c+d\,x}\right]\right)+\text{PolyLog}\left[2,-e^{c+d\,x}\right]-\text{PolyLog}\left[2,e^{c+d\,x}\right]\right)-$$
$$\frac{1}{d^2}(-1+e^{2\,c})\,f^2\,\left(2\,d\,x\,\left(d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]\right)+\frac{1}{d^2}$$
$$i\,(-1+e^{2\,c})\,f^2\,\left(-d^2\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]+d^2\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]+2\,d\,x\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]-\right.$$
$$\left.2\,d\,x\,\text{PolyLog}\left[2,e^{c+d\,x}\right]-2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]+2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]\right)\Bigg)+$$

$$\frac{1}{2\,a\,d}\text{Sech}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\,\left(-e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-2\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+$$
$$\frac{1}{2\,a\,d}$$
$$\text{Csch}\left[\frac{c}{2}\right]\,\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)-$$
$$\frac{2\,\left(e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)}{a\,d\,\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\,\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}$$

Problem 213: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Csch}[c+d\,x]^2}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 163 leaves, 12 steps):

$$\frac{2\,i\,(e+f\,x)\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{(e+f\,x)\,\text{Coth}[c+d\,x]}{a\,d}+$$
$$\frac{2\,f\,\text{Log}\left[\text{Cosh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]\right]}{a\,d^2}+\frac{f\,\text{Log}[\text{Sinh}[c+d\,x]]}{a\,d^2}+$$
$$\frac{i\,f\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a\,d^2}-\frac{i\,f\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a\,d^2}-\frac{(e+f\,x)\,\text{Tanh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]}{a\,d}$$

Result (type 4, 770 leaves):

$$-\frac{i f (c+d x) \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2}{d^2 (a+i a \text{Sinh}[c+d x])}+$$
$$\left(2 i f \text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right] \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\Big/$$
$$\left(d^2 (a+i a \text{Sinh}[c+d x])\right)+$$
$$\left(\left(-d e \text{Cosh}\left[\frac{1}{2} (c+d x)\right]+c f \text{Cosh}\left[\frac{1}{2} (c+d x)\right]-f (c+d x) \text{Cosh}\left[\frac{1}{2} (c+d x)\right]\right) \text{Csch}\left[\frac{1}{2} (c+d x)\right]\right.$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\Big/\left(2 d^2 (a+i a \text{Sinh}[c+d x])\right)+$$
$$\frac{f \text{Log}[\text{Cosh}[c+d x]] \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2}{d^2 (a+i a \text{Sinh}[c+d x])}+$$
$$\frac{f \text{Log}[\text{Sinh}[c+d x]] \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2}{d^2 (a+i a \text{Sinh}[c+d x])}-$$
$$\left(i e \text{Log}\left[\text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right] \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\Big/$$
$$\left(d (a+i a \text{Sinh}[c+d x])\right)+$$
$$\left(i c f \text{Log}\left[\text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right] \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\Big/$$
$$\left(d^2 (a+i a \text{Sinh}[c+d x])\right)-$$
$$\left(f \left(i (c+d x) \left(\text{Log}\left[1-e^{-c-d x}\right]-\text{Log}\left[1+e^{-c-d x}\right]\right)+i \left(\text{PolyLog}\left[2,-e^{-c-d x}\right]-\text{PolyLog}\left[2,e^{-c-d x}\right]\right)\right)\right.$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2\right)\Big/\left(d^2 (a+i a \text{Sinh}[c+d x])\right)+$$
$$\left(\text{Sech}\left[\frac{1}{2} (c+d x)\right] \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)^2\right.$$
$$\left.\left(-d e \text{Sinh}\left[\frac{1}{2} (c+d x)\right]+c f \text{Sinh}\left[\frac{1}{2} (c+d x)\right]-f (c+d x) \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)\right)\Big/$$
$$\left(2 d^2 (a+i a \text{Sinh}[c+d x])\right)-\left(2 \left(\text{Cosh}\left[\frac{1}{2} (c+d x)\right]+i \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)\right.$$
$$\left.\left(d e \text{Sinh}\left[\frac{1}{2} (c+d x)\right]-c f \text{Sinh}\left[\frac{1}{2} (c+d x)\right]+f (c+d x) \text{Sinh}\left[\frac{1}{2} (c+d x)\right]\right)\right)\Big/$$
$$\left(d^2 (a+i a \text{Sinh}[c+d x])\right)$$

Problem 214: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Csch}[c+d x]^2}{a+i a \text{Sinh}[c+d x]} \, dx$$

Optimal (type 3, 57 leaves, 5 steps):

$$\frac{i \text{ArcTanh}[\text{Cosh}[c+d x]]}{a d}-\frac{2 \text{Coth}[c+d x]}{a d}+\frac{\text{Coth}[c+d x]}{d (a+i a \text{Sinh}[c+d x])}$$

Result (type 3, 176 leaves):

$$\frac{1}{2\,a\,d\,\left(-i+\text{Sinh}[c+d\,x]\right)}\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]^2\right.$$
$$\left(-2+i\,\text{Coth}\left[\frac{1}{2}\,(c+d\,x)\right]+2\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-2\,\text{Log}\left[\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)-$$
$$2\left(3+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-\text{Log}\left[\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]^2-$$
$$2\,i\,\text{Csch}[c+d\,x]\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]^4+$$
$$\left.2\,i\left(1+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-\text{Log}\left[\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\text{Sinh}[c+d\,x]\right)$$

Problem 215: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]^2}{(e+f\,x)\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^2}{(e+f\,x)\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 216: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]^2}{(e+f\,x)^2\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^2}{(e+f\,x)^2\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 217: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]^3}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 546 leaves, 40 steps):

$$\frac{2\,i\,(e+f x)^3}{a d}-\frac{6 f^2 (e+f x)\,\text{ArcTanh}\left[e^{c+d x}\right]}{a d^3}+\frac{3 (e+f x)^3\,\text{ArcTanh}\left[e^{c+d x}\right]}{a d}+$$
$$\frac{i\,(e+f x)^3\,\text{Coth}[c+d x]}{a d}-\frac{3 f (e+f x)^2\,\text{Csch}[c+d x]}{2 a d^2}-\frac{(e+f x)^3\,\text{Coth}[c+d x]\,\text{Csch}[c+d x]}{2 a d}-$$
$$\frac{6\,i\,f (e+f x)^2\,\text{Log}\left[1+i\,e^{c+d x}\right]}{a d^2}-\frac{3\,i\,f (e+f x)^2\,\text{Log}\left[1-e^{2 (c+d x)}\right]}{a d^2}-\frac{3 f^3\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{a d^4}+$$
$$\frac{9 f (e+f x)^2\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{2 a d^2}-\frac{12\,i\,f^2 (e+f x)\,\text{PolyLog}\left[2,-i\,e^{c+d x}\right]}{a d^3}+$$
$$\frac{3 f^3\,\text{PolyLog}\left[2,e^{c+d x}\right]}{a d^4}-\frac{9 f (e+f x)^2\,\text{PolyLog}\left[2,e^{c+d x}\right]}{2 a d^2}-$$
$$\frac{3\,i\,f^2 (e+f x)\,\text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{a d^3}-\frac{9 f^2 (e+f x)\,\text{PolyLog}\left[3,-e^{c+d x}\right]}{a d^3}+$$
$$\frac{12\,i\,f^3\,\text{PolyLog}\left[3,-i\,e^{c+d x}\right]}{a d^4}+\frac{9 f^2 (e+f x)\,\text{PolyLog}\left[3,e^{c+d x}\right]}{a d^3}+\frac{3\,i\,f^3\,\text{PolyLog}\left[3,e^{2 (c+d x)}\right]}{2 a d^4}+$$
$$\frac{9 f^3\,\text{PolyLog}\left[4,-e^{c+d x}\right]}{a d^4}-\frac{9 f^3\,\text{PolyLog}\left[4,e^{c+d x}\right]}{a d^4}+\frac{i\,(e+f x)^3\,\text{Tanh}\left[\frac{c}{2}+\frac{i\pi}{4}+\frac{d x}{2}\right]}{a d}$$

Result (type 4, 2395 leaves):

$$-\frac{3 e^3\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{2 a d}+\frac{3 e f^2\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a d^3}-\frac{1}{2 a d^2}$$
$$9 e^2 f\left(-c\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]-i\left((i c+i d x)\left(\text{Log}\left[1-e^{i (i c+i d x)}\right]-\text{Log}\left[1+e^{i (i c+i d x)}\right]\right)+\right.\right.$$
$$\left.\left.i\left(\text{PolyLog}\left[2,-e^{i (i c+i d x)}\right]-\text{PolyLog}\left[2,e^{i (i c+i d x)}\right]\right)\right)\right)+\frac{1}{a d^4}$$
$$3 f^3\left(-c\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]-i\left((i c+i d x)\left(\text{Log}\left[1-e^{i (i c+i d x)}\right]-\text{Log}\left[1+e^{i (i c+i d x)}\right]\right)+\right.\right.$$
$$\left.\left.i\left(\text{PolyLog}\left[2,-e^{i (i c+i d x)}\right]-\text{PolyLog}\left[2,e^{i (i c+i d x)}\right]\right)\right)\right)-\frac{1}{a d^4\left(-i+e^c\right)}$$
$$2 f\left(d^2\left(-i\,d\,e^c x\left(3 e^2+3 e f x+f^2 x^2\right)+3\left(1+i\,e^c\right)(e+f x)^2\,\text{Log}\left[1+i\,e^{c+d x}\right]\right)+\right.$$
$$\left.6 d\left(1+i\,e^c\right) f (e+f x)\,\text{PolyLog}\left[2,-i\,e^{c+d x}\right]-6\,i\left(-i+e^c\right) f^2\,\text{PolyLog}\left[3,-i\,e^{c+d x}\right]\right)+$$
$$\frac{1}{4 a d^4}i\,e^{-c} f^3\,\text{Csch}[c]\left(2 d^2 x^2\left(2 d\,e^{2 c} x-3\left(-1+e^{2 c}\right)\text{Log}\left[1-e^{2 (c+d x)}\right]\right)-\right.$$
$$\left.6 d\left(-1+e^{2 c}\right) x\,\text{PolyLog}\left[2,e^{2 (c+d x)}\right]+3\left(-1+e^{2 c}\right)\text{PolyLog}\left[3,e^{2 (c+d x)}\right]\right)+\frac{1}{a d^3}$$
$$9 e f^2\left(d^2 x^2\,\text{ArcTanh}[\text{Cosh}[c+d x]+\text{Sinh}[c+d x]]+d x\,\text{PolyLog}[2,-\text{Cosh}[c+d x]-\text{Sinh}[c+d x]]-\right.$$
$$d x\,\text{PolyLog}[2,\text{Cosh}[c+d x]+\text{Sinh}[c+d x]]-\text{PolyLog}[3,-\text{Cosh}[c+d x]-\text{Sinh}[c+d x]]+$$
$$\left.\text{PolyLog}[3,\text{Cosh}[c+d x]+\text{Sinh}[c+d x]]\right)-\frac{1}{2 a d^4}$$
$$3 f^3\left(d^3 x^3\,\text{Log}\left[1-e^{c+d x}\right]-d^3 x^3\,\text{Log}\left[1+e^{c+d x}\right]-3 d^2 x^2\,\text{PolyLog}\left[2,-e^{c+d x}\right]+\right.$$
$$3 d^2 x^2\,\text{PolyLog}\left[2,e^{c+d x}\right]+6 d x\,\text{PolyLog}\left[3,-e^{c+d x}\right]-$$
$$\left.6 d x\,\text{PolyLog}\left[3,e^{c+d x}\right]-6\,\text{PolyLog}\left[4,-e^{c+d x}\right]+6\,\text{PolyLog}\left[4,e^{c+d x}\right]\right)+$$
$$\left(3\,i\,e^2 f\,\text{Csch}[c]\left(-d x\,\text{Cosh}[c]+\text{Log}[\text{Cosh}[d x]\,\text{Sinh}[c]+\text{Cosh}[c]\,\text{Sinh}[d x]]\,\text{Sinh}[c]\right)\right)\Big/$$
$$\left(a d^2\left(-\text{Cosh}[c]^2+\text{Sinh}[c]^2\right)\right)+$$

$$\frac{1}{8\,a\,d^2\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}\text{Csch}[c]\,\text{Csch}[c+d\,x]^2$$

$$\left(3\,e^2\,f\,\text{Cosh}\left[\frac{d\,x}{2}\right]+6\,e\,f^2\,x\,\text{Cosh}\left[\frac{d\,x}{2}\right]+3\,f^3\,x^2\,\text{Cosh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,\text{Cosh}\left[\frac{3\,d\,x}{2}\right]+\right.$$

$$6\,e\,f^2\,x\,\text{Cosh}\left[\frac{3\,d\,x}{2}\right]+3\,f^3\,x^2\,\text{Cosh}\left[\frac{3\,d\,x}{2}\right]+5\,i\,d\,e^3\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]+15\,i\,d\,e^2\,f\,x\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]+$$

$$15\,i\,d\,e\,f^2\,x^2\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]+5\,i\,d\,f^3\,x^3\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]-i\,d\,e^3\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-$$

$$3\,i\,d\,e^2\,f\,x\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-3\,i\,d\,e\,f^2\,x^2\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-i\,d\,f^3\,x^3\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-$$

$$3\,e^2\,f\,\text{Cosh}\left[2\,c+\frac{d\,x}{2}\right]-6\,e\,f^2\,x\,\text{Cosh}\left[2\,c+\frac{d\,x}{2}\right]-3\,f^3\,x^2\,\text{Cosh}\left[2\,c+\frac{d\,x}{2}\right]+$$

$$i\,d\,e^3\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]+3\,i\,d\,e^2\,f\,x\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]+3\,i\,d\,e\,f^2\,x^2\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]+$$

$$i\,d\,f^3\,x^3\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]-3\,e^2\,f\,\text{Cosh}\left[2\,c+\frac{3\,d\,x}{2}\right]-6\,e\,f^2\,x\,\text{Cosh}\left[2\,c+\frac{3\,d\,x}{2}\right]-$$

$$3\,f^3\,x^2\,\text{Cosh}\left[2\,c+\frac{3\,d\,x}{2}\right]-3\,i\,d\,e^3\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-9\,i\,d\,e^2\,f\,x\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-$$

$$9\,i\,d\,e\,f^2\,x^2\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-3\,i\,d\,f^3\,x^3\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-4\,i\,d\,e^3\,\text{Cosh}\left[c+\frac{5\,d\,x}{2}\right]-$$

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

$$2\,i\,d\,e^3\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]+6\,i\,d\,e^2\,f\,x\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]+6\,i\,d\,e\,f^2\,x^2\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]+$$

$$2\,i\,d\,f^3\,x^3\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]-d\,e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]-3\,d\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-3\,d\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-$$

$$d\,f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]-d\,e^3\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]-3\,d\,e^2\,f\,x\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]-3\,d\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]-$$

$$d\,f^3\,x^3\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]+3\,i\,e^2\,f\,\text{Sinh}\left[c-\frac{d\,x}{2}\right]+6\,i\,e\,f^2\,x\,\text{Sinh}\left[c-\frac{d\,x}{2}\right]+3\,i\,f^3\,x^2\,\text{Sinh}\left[c-\frac{d\,x}{2}\right]+$$

$$3\,i\,e^2\,f\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+6\,i\,e\,f^2\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+3\,i\,f^3\,x^2\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]-$$

$$3\,d\,e^3\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]-9\,d\,e^2\,f\,x\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]-9\,d\,e\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]-$$

$$3\,d\,f^3\,x^3\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]+3\,i\,e^2\,f\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+6\,i\,e\,f^2\,x\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+$$

$$3\,i\,f^3\,x^2\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-d\,e^3\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-3\,d\,e^2\,f\,x\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-$$

$$3\,d\,e\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-d\,f^3\,x^3\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-3\,i\,e^2\,f\,\text{Sinh}\left[3\,c+\frac{3\,d\,x}{2}\right]-$$

$$6\,i\,e\,f^2\,x\,\text{Sinh}\left[3\,c+\frac{3\,d\,x}{2}\right]-3\,i\,f^3\,x^2\,\text{Sinh}\left[3\,c+\frac{3\,d\,x}{2}\right]+2\,d\,e^3\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+$$

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

$$\left(3\,i\,e\,f^2\,\text{Csch}[c]\,\text{Sech}[c]\left(-d^2\,e^{-\text{ArcTanh}[\text{Tanh}[c]]}\,x^2+\frac{1}{\sqrt{1-\text{Tanh}[c]^2}}\right.\right.$$
$$i\left(-d\,x\left(-\pi+2\,i\,\text{ArcTanh}[\text{Tanh}[c]]\right)-\pi\,\text{Log}\left[1+e^{2\,d\,x}\right]-2\left(i\,d\,x+i\,\text{ArcTanh}[\text{Tanh}[c]]\right)\right.$$
$$\text{Log}\left[1-e^{2\,i\,(i\,d\,x+i\,\text{ArcTanh}[\text{Tanh}[c]])}\right]+\pi\,\text{Log}[\text{Cosh}[d\,x]]+2\,i\,\text{ArcTanh}[\text{Tanh}[c]]$$
$$\left.\text{Log}[i\,\text{Sinh}[d\,x+\text{ArcTanh}[\text{Tanh}[c]]]]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,(i\,d\,x+i\,\text{ArcTanh}[\text{Tanh}[c]])}\right]\right)$$
$$\left.\left.\text{Tanh}[c]\right)\right)\Big/\left(a\,d^3\,\sqrt{\text{Sech}[c]^2\left(\text{Cosh}[c]^2-\text{Sinh}[c]^2\right)}\right)$$

Problem 218: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Csch}[c+d\,x]^3}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 368 leaves, 30 steps):

$$\frac{2\,i\,(e+f\,x)^2}{a\,d}+\frac{3\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{f^2\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a\,d^3}+\frac{i\,(e+f\,x)^2\,\text{Coth}[c+d\,x]}{a\,d}-$$
$$\frac{f\,(e+f\,x)\,\text{Csch}[c+d\,x]}{a\,d^2}-\frac{(e+f\,x)^2\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{2\,a\,d}-\frac{4\,i\,f\,(e+f\,x)\,\text{Log}\left[1+i\,e^{c+d\,x}\right]}{a\,d^2}-$$
$$\frac{2\,i\,f\,(e+f\,x)\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a\,d^2}+\frac{3\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]}{a\,d^2}-$$
$$\frac{4\,i\,f^2\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{a\,d^3}-\frac{3\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]}{a\,d^2}-\frac{i\,f^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]}{a\,d^3}-$$
$$\frac{3\,f^2\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]}{a\,d^3}+\frac{3\,f^2\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]}{a\,d^3}+\frac{i\,(e+f\,x)^2\,\text{Tanh}\left[\frac{c}{2}+\frac{i\,\pi}{4}+\frac{d\,x}{2}\right]}{a\,d}$$

Result (type 4, 1528 leaves):

$$-\frac{3\,e^2\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{2\,a\,d}+\frac{f^2\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a\,d^3}-\frac{1}{a\,d^2}$$
$$3\,e\,f\left(-c\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-i\left(\left(i\,c+i\,d\,x\right)\left(\text{Log}\left[1-e^{i\,(i\,c+i\,d\,x)}\right]-\text{Log}\left[1+e^{i\,(i\,c+i\,d\,x)}\right]\right)+\right.\right.$$
$$\left.\left.i\left(\text{PolyLog}\left[2,\,-e^{i\,(i\,c+i\,d\,x)}\right]-\text{PolyLog}\left[2,\,e^{i\,(i\,c+i\,d\,x)}\right]\right)\right)\right)+$$
$$\frac{1}{a\,d^3\left(-1-i\,e^c\right)}2\,f\left(d\left(d\,e^c\,x\,(2\,e+f\,x)-2\left(-i+e^c\right)(e+f\,x)\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\right)-\right.$$
$$\left.2\left(-i+e^c\right)f\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]\right)+\frac{1}{a\,d^3}$$
$$3\,f^2\left(d^2\,x^2\,\text{ArcTanh}[\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]]+d\,x\,\text{PolyLog}[2,\,-\text{Cosh}[c+d\,x]-\text{Sinh}[c+d\,x]]-\right.$$
$$d\,x\,\text{PolyLog}[2,\,\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]]-$$
$$\left.\text{PolyLog}[3,\,-\text{Cosh}[c+d\,x]-\text{Sinh}[c+d\,x]]+\text{PolyLog}[3,\,\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]]\right)+$$
$$\left(2\,i\,e\,f\,\text{Csch}[c]\left(-d\,x\,\text{Cosh}[c]+\text{Log}[\text{Cosh}[d\,x]\,\text{Sinh}[c]+\text{Cosh}[c]\,\text{Sinh}[d\,x]]\,\text{Sinh}[c]\right)\right)\Big/$$
$$\left(a\,d^2\left(-\text{Cosh}[c]^2+\text{Sinh}[c]^2\right)\right)+$$

$$\frac{1}{8\,a\,d^2\left(\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}$$

$$\text{Csch}[c]\,\text{Csch}[c+d\,x]^2\,\Big(2\,e\,f\,\text{Cosh}\left[\frac{d\,x}{2}\right]+2\,f^2\,x\,\text{Cosh}\left[\frac{d\,x}{2}\right]+2\,e\,f\,\text{Cosh}\left[\frac{3\,d\,x}{2}\right]+$$

$$2\,f^2\,x\,\text{Cosh}\left[\frac{3\,d\,x}{2}\right]+5\,\mathrm{i}\,d\,e^2\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]+10\,\mathrm{i}\,d\,e\,f\,x\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]+$$

$$5\,\mathrm{i}\,d\,f^2\,x^2\,\text{Cosh}\left[c-\frac{d\,x}{2}\right]-\mathrm{i}\,d\,e^2\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-2\,\mathrm{i}\,d\,e\,f\,x\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-$$

$$\mathrm{i}\,d\,f^2\,x^2\,\text{Cosh}\left[c+\frac{d\,x}{2}\right]-2\,e\,f\,\text{Cosh}\left[2\,c+\frac{d\,x}{2}\right]-2\,f^2\,x\,\text{Cosh}\left[2\,c+\frac{d\,x}{2}\right]+\mathrm{i}\,d\,e^2\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]+$$

$$2\,\mathrm{i}\,d\,e\,f\,x\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]+\mathrm{i}\,d\,f^2\,x^2\,\text{Cosh}\left[c+\frac{3\,d\,x}{2}\right]-2\,e\,f\,\text{Cosh}\left[2\,c+\frac{3\,d\,x}{2}\right]-$$

$$2\,f^2\,x\,\text{Cosh}\left[2\,c+\frac{3\,d\,x}{2}\right]-3\,\mathrm{i}\,d\,e^2\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-6\,\mathrm{i}\,d\,e\,f\,x\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-$$

$$3\,\mathrm{i}\,d\,f^2\,x^2\,\text{Cosh}\left[3\,c+\frac{3\,d\,x}{2}\right]-4\,\mathrm{i}\,d\,e^2\,\text{Cosh}\left[c+\frac{5\,d\,x}{2}\right]-8\,\mathrm{i}\,d\,e\,f\,x\,\text{Cosh}\left[c+\frac{5\,d\,x}{2}\right]-$$

$$4\,\mathrm{i}\,d\,f^2\,x^2\,\text{Cosh}\left[c+\frac{5\,d\,x}{2}\right]+2\,\mathrm{i}\,d\,e^2\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]+4\,\mathrm{i}\,d\,e\,f\,x\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]+$$

$$2\,\mathrm{i}\,d\,f^2\,x^2\,\text{Cosh}\left[3\,c+\frac{5\,d\,x}{2}\right]-d\,e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-2\,d\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-d\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-$$

$$d\,e^2\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]-2\,d\,e\,f\,x\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]-d\,f^2\,x^2\,\text{Sinh}\left[\frac{3\,d\,x}{2}\right]+2\,\mathrm{i}\,e\,f\,\text{Sinh}\left[c-\frac{d\,x}{2}\right]+$$

$$2\,\mathrm{i}\,f^2\,x\,\text{Sinh}\left[c-\frac{d\,x}{2}\right]+2\,\mathrm{i}\,e\,f\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]+2\,\mathrm{i}\,f^2\,x\,\text{Sinh}\left[c+\frac{d\,x}{2}\right]-3\,d\,e^2\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]-$$

$$6\,d\,e\,f\,x\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]-3\,d\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{d\,x}{2}\right]+2\,\mathrm{i}\,e\,f\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]+$$

$$2\,\mathrm{i}\,f^2\,x\,\text{Sinh}\left[c+\frac{3\,d\,x}{2}\right]-d\,e^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-2\,d\,e\,f\,x\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-$$

$$d\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{3\,d\,x}{2}\right]-2\,\mathrm{i}\,e\,f\,\text{Sinh}\left[3\,c+\frac{3\,d\,x}{2}\right]-2\,\mathrm{i}\,f^2\,x\,\text{Sinh}\left[3\,c+\frac{3\,d\,x}{2}\right]+$$

$$2\,d\,e^2\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+4\,d\,e\,f\,x\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]+2\,d\,f^2\,x^2\,\text{Sinh}\left[2\,c+\frac{5\,d\,x}{2}\right]\Big)-$$

$$\Bigg(\mathrm{i}\,f^2\,\text{Csch}[c]\,\text{Sech}[c]\,\Bigg(-d^2\,e^{-\text{ArcTanh}[\text{Tanh}[c]]}\,x^2+\frac{1}{\sqrt{1-\text{Tanh}[c]^2}}$$

$$\mathrm{i}\,\Big(-d\,x\,\left(-\pi+2\,\mathrm{i}\,\text{ArcTanh}[\text{Tanh}[c]]\right)-\pi\,\text{Log}\left[1+e^{2\,d\,x}\right]-2\,\left(\mathrm{i}\,d\,x+\mathrm{i}\,\text{ArcTanh}[\text{Tanh}[c]]\right)$$

$$\text{Log}\left[1-e^{2\,\mathrm{i}\,(\mathrm{i}\,d\,x+\mathrm{i}\,\text{ArcTanh}[\text{Tanh}[c]])}\right]+\pi\,\text{Log}[\text{Cosh}[d\,x]]+2\,\mathrm{i}\,\text{ArcTanh}[\text{Tanh}[c]]$$

$$\text{Log}[\mathrm{i}\,\text{Sinh}[d\,x+\text{ArcTanh}[\text{Tanh}[c]]]]+\mathrm{i}\,\text{PolyLog}\left[2,\,e^{2\,\mathrm{i}\,(\mathrm{i}\,d\,x+\mathrm{i}\,\text{ArcTanh}[\text{Tanh}[c]])}\right]\Big)$$

$$\text{Tanh}[c]\Bigg)\Bigg)\Bigg/\left(a\,d^3\,\sqrt{\text{Sech}[c]^2\,\left(\text{Cosh}[c]^2-\text{Sinh}[c]^2\right)}\right)$$

Problem 219: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \operatorname{Csch}[c+d x]^3}{a+i a \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 214 leaves, 19 steps):

$$\frac{3 (e+f x) \operatorname{ArcTanh}\left[e^{c+d x}\right]}{a d}+\frac{i (e+f x) \operatorname{Coth}[c+d x]}{a d}-\frac{f \operatorname{Csch}[c+d x]}{2 a d^2}-\frac{(e+f x) \operatorname{Coth}[c+d x] \operatorname{Csch}[c+d x]}{2 a d}-\frac{2 i f \operatorname{Log}\left[\operatorname{Cosh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right]\right]}{a d^2}-\frac{i f \operatorname{Log}[\operatorname{Sinh}[c+d x]]}{a d^2}+\frac{3 f \operatorname{PolyLog}\left[2,-e^{c+d x}\right]}{2 a d^2}-\frac{3 f \operatorname{PolyLog}\left[2, e^{c+d x}\right]}{2 a d^2}+\frac{i (e+f x) \operatorname{Tanh}\left[\frac{c}{2}+\frac{i \pi}{4}+\frac{d x}{2}\right]}{a d}$$

Result (type 4, 541 leaves):

$$\frac{1}{8 d^2 (a+i a \operatorname{Sinh}[c+d x])}\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right) \left(2 i (i f+2 d (e+f x)) \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]\left(i+\operatorname{Coth}\left[\frac{1}{2}(c+d x)\right]\right)- d (e+f x)\left(i+\operatorname{Coth}\left[\frac{1}{2}(c+d x)\right]\right) \operatorname{Csch}\left[\frac{1}{2}(c+d x)\right]- 8 f (c+d x)\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+ 16 f \operatorname{ArcTan}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)- 12 d e \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+ 12 c f \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)- 12 f\left((c+d x)\left(\operatorname{Log}\left[1-e^{-c-d x}\right]-\operatorname{Log}\left[1+e^{-c-d x}\right]\right)+\operatorname{PolyLog}\left[2,-e^{-c-d x}\right]-\operatorname{PolyLog}\left[2, e^{-c-d x}\right]\right) \left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+16 i d (e+f x) \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]+ 8 f \operatorname{Log}[\operatorname{Cosh}[c+d x]]\left(-i \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+ 8 f \operatorname{Log}[\operatorname{Sinh}[c+d x]]\left(-i \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)+ 2 (f+2 i d (e+f x))\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right) \operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]- i d (e+f x) \operatorname{Sech}\left[\frac{1}{2}(c+d x)\right]\left(-i+\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right)\right)$$

Problem 220: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Csch}[c+d x]^3}{a+i a \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 3, 87 leaves, 6 steps):

$$\frac{3\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{2\,a\,d}+\frac{2\,i\,\text{Coth}[c+d\,x]}{a\,d}-\frac{3\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{2\,a\,d}+\frac{\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{d\,(a+i\,a\,\text{Sinh}[c+d\,x])}$$

Result (type 3, 422 leaves):

$$\frac{i\,\text{Coth}\left[\frac{1}{2}(c+d\,x)\right]\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}{2\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])}-\frac{\text{Csch}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}{8\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])}+\frac{3\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]\right]\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}{2\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])}-\frac{3\,\text{Log}\left[\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right]\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}{2\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])}-\frac{\text{Sech}\left[\frac{1}{2}(c+d\,x)\right]^2\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)^2}{8\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])}+\frac{2\,i\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]}{d\,(a+i\,a\,\text{Sinh}[c+d\,x])}+\frac{i\left(\text{Cosh}\left[\frac{1}{2}(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d\,x)\right]\right)^2\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{2\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])}$$

Problem 221: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Csch}[c+d\,x]^3}{(e+f\,x)\,(a+i\,a\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^3}{(e+f\,x)\,(a+i\,a\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 222: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Csch}[c+d\,x]^3}{(e+f\,x)^2\,(a+i\,a\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^3}{(e+f\,x)^2\,(a+i\,a\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 223: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 453 leaves, 14 steps):

$$\frac{(e+f\,x)^4}{4\,b\,f}-\frac{a\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d}+\frac{a\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d}-$$
$$\frac{3\,a\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d^2}+\frac{3\,a\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d^2}+$$
$$\frac{6\,a\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d^3}-\frac{6\,a\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d^3}-$$
$$\frac{6\,a\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d^4}+\frac{6\,a\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b\,\sqrt{a^2+b^2}\,d^4}$$

Result (type 4, 1074 leaves):

$$\frac{x\left(4 e^3+6 e^2 f x+4 e f^2 x^2+f^3 x^3\right)}{4 b}-$$

$$\frac{1}{b\sqrt{-a^2-b^2}\; d^4\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\, a\left(2 d^3 e^3\sqrt{\left(a^2+b^2\right)\, e^{2 c}}\;\text{ArcTan}\left[\frac{a+b\, e^{c+d x}}{\sqrt{-a^2-b^2}}\right]+\right.$$

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

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

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

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

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

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

$$6\sqrt{-a^2-b^2}\; d\, e\, e^c f^2\,\text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\; d\, e^c f^3 x\,\text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\; d\, e\, e^c f^2\,\text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\; d\, e^c f^3 x\,\text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\; e^c f^3\,\text{PolyLog}\left[4,-\frac{b\, e^{2 c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\right]-$$

$$\left.6\sqrt{-a^2-b^2}\; e^c f^3\,\text{PolyLog}\left[4,-\frac{b\, e^{2 c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2 c}}}\right]\right)$$

Problem 228: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3\,\text{Sinh}[c+d x]^2}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 551 leaves, 19 steps):

$$-\frac{a\,(e+f\,x)^4}{4\,b^2\,f}+\frac{6\,f^2\,(e+f\,x)\,\text{Cosh}[c+d\,x]}{b\,d^3}+\frac{(e+f\,x)^3\,\text{Cosh}[c+d\,x]}{b\,d}+\frac{a^2\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d}-\frac{a^2\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d}+\frac{3\,a^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d^2}-\frac{3\,a^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d^2}-\frac{6\,a^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d^3}+\frac{6\,a^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d^3}+\frac{6\,a^2\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d^4}-\frac{6\,a^2\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,\sqrt{a^2+b^2}\,d^4}-\frac{6\,f^3\,\text{Sinh}[c+d\,x]}{b\,d^4}-\frac{3\,f\,(e+f\,x)^2\,\text{Sinh}[c+d\,x]}{b\,d^2}$$

Result (type 4, 1697 leaves) :

$$\frac{1}{b^2\,\sqrt{-a^2-b^2}\,d^4\,\sqrt{(a^2+b^2)\,e^{2\,c}}}$$

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

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

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

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

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

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

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

$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\ d\, e^c f^3 x\, \text{PolyLog}\left[3,\ -\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\ d\, e\, e^c f^2\, \text{PolyLog}\left[3,\ -\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\ d\, e^c f^3 x\, \text{PolyLog}\left[3,\ -\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\ e^c f^3\, \text{PolyLog}\left[4,\ -\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\ e^c f^3\, \text{PolyLog}\left[4,\ -\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]\Bigg)+$$

$$\left(\frac{\text{Cosh}[c+dx]}{4 b^2 d^4}-\frac{\text{Sinh}[c+dx]}{4 b^2 d^4}\right)\left(2 b d^3 e^3+6 b d^2 e^2 f+12 b d e f^2+12 b f^3+6 b d^3 e^2 f x+\right.$$
$$12 b d^2 e f^2 x+12 b d f^3 x+6 b d^3 e f^2 x^2+6 b d^2 f^3 x^2+2 b d^3 f^3 x^3-4 a d^4 e^3 x\, \text{Cosh}[c+dx]-$$
$$6 a d^4 e^2 f x^2\, \text{Cosh}[c+dx]-4 a d^4 e f^2 x^3\, \text{Cosh}[c+dx]-a d^4 f^3 x^4\, \text{Cosh}[c+dx]+$$
$$2 b d^3 e^3\, \text{Cosh}[2c+2dx]-6 b d^2 e^2 f\, \text{Cosh}[2c+2dx]+12 b d e f^2\, \text{Cosh}[2c+2dx]-$$
$$12 b f^3\, \text{Cosh}[2c+2dx]+6 b d^3 e^2 f x\, \text{Cosh}[2c+2dx]-12 b d^2 e f^2 x\, \text{Cosh}[2c+2dx]+$$
$$12 b d f^3 x\, \text{Cosh}[2c+2dx]+6 b d^3 e f^2 x^2\, \text{Cosh}[2c+2dx]-6 b d^2 f^3 x^2\, \text{Cosh}[2c+2dx]+$$
$$2 b d^3 f^3 x^3\, \text{Cosh}[2c+2dx]-4 a d^4 e^3 x\, \text{Sinh}[c+dx]-6 a d^4 e^2 f x^2\, \text{Sinh}[c+dx]-$$
$$4 a d^4 e f^2 x^3\, \text{Sinh}[c+dx]-a d^4 f^3 x^4\, \text{Sinh}[c+dx]+2 b d^3 e^3\, \text{Sinh}[2c+2dx]-$$
$$6 b d^2 e^2 f\, \text{Sinh}[2c+2dx]+12 b d e f^2\, \text{Sinh}[2c+2dx]-12 b f^3\, \text{Sinh}[2c+2dx]+$$
$$6 b d^3 e^2 f x\, \text{Sinh}[2c+2dx]-12 b d^2 e f^2 x\, \text{Sinh}[2c+2dx]+12 b d f^3 x\, \text{Sinh}[2c+2dx]+$$
$$\left.6 b d^3 e f^2 x^2\, \text{Sinh}[2c+2dx]-6 b d^2 f^3 x^2\, \text{Sinh}[2c+2dx]+2 b d^3 f^3 x^3\, \text{Sinh}[2c+2dx]\right)$$

Problem 232: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sinh}[c+dx]^2}{(e+fx)\,(a+b\,\text{Sinh}[c+dx])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c+dx]^2}{(e+fx)\,(a+b\,\text{Sinh}[c+dx])},\ x\right]$$

Result (type 1, 1 leaves):

???

Problem 233: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+fx)^3\,\text{Sinh}[c+dx]^3}{a+b\,\text{Sinh}[c+dx]}\,dx$$

Optimal (type 4, 712 leaves, 24 steps):

$$-\frac{3 e f^2 x}{4 b d^2}-\frac{3 f^3 x^2}{8 b d^2}+\frac{a^2 (e+f x)^4}{4 b^3 f}-\frac{(e+f x)^4}{8 b f}-\frac{6 a f^2 (e+f x) \text{Cosh}[c+d x]}{b^2 d^3}-\frac{a (e+f x)^3 \text{Cosh}[c+d x]}{b^2 d}-\frac{a^3 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d}+\frac{a^3 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d}-\frac{3 a^3 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d^2}+\frac{3 a^3 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d^2}+\frac{6 a^3 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d^3}-\frac{6 a^3 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d^3}-\frac{6 a^3 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d^4}+\frac{6 a^3 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 \sqrt{a^2+b^2} d^4}+\frac{6 a f^3 \text{Sinh}[c+d x]}{b^2 d^4}+\frac{3 a f (e+f x)^2 \text{Sinh}[c+d x]}{b^2 d^2}+\frac{3 f^2 (e+f x) \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b d^3}+\frac{(e+f x)^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 b d}-\frac{3 f^3 \text{Sinh}[c+d x]^2}{8 b d^4}-\frac{3 f (e+f x)^2 \text{Sinh}[c+d x]^2}{4 b d^2}$$

Result (type 4, 2013 leaves):

$$-\frac{(-2 a^2+b^2) e^3 x}{2 b^3}-\frac{3 (-2 a^2+b^2) e^2 f x^2}{4 b^3}-\frac{(-2 a^2+b^2) e f^2 x^3}{2 b^3}-\frac{(-2 a^2+b^2) f^3 x^4}{8 b^3}-\frac{1}{b^3 \sqrt{-a^2-b^2} d^4 \sqrt{(a^2+b^2) e^{2 c}}}$$

$$a^3 \Bigg(2 d^3 e^3 \sqrt{(a^2+b^2) e^{2 c}} \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]+3 \sqrt{-a^2-b^2} d^3 e^2 e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]+3 \sqrt{-a^2-b^2} d^3 e e^c f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]+\sqrt{-a^2-b^2} d^3 e^c f^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-3 \sqrt{-a^2-b^2} d^3 e^2 e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]-3 \sqrt{-a^2-b^2} d^3 e e^c f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]-\sqrt{-a^2-b^2} d^3 e^c f^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]+3 \sqrt{-a^2-b^2} d^2 e^c f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-$$

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

$$6\sqrt{-a^2-b^2}\;d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\;d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\;d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\;d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\;e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\;e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]\Bigg)+$$

$$\Bigg(-\frac{a\,f^3\,x^3\,\text{Cosh}[c]}{2\,b^2\,d}+\frac{a\,f^3\,x^3\,\text{Sinh}[c]}{2\,b^2\,d}+\left(d^3\,e^3+3\,d^2\,e^2\,f+6\,d\,e\,f^2+6\,f^3\right)\left(-\frac{a\,\text{Cosh}[c]}{2\,b^2\,d^4}+\frac{a\,\text{Sinh}[c]}{2\,b^2\,d^4}\right)+$$

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

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

$$\Bigg(-\frac{a\,f^3\,x^3\,\text{Cosh}[c]}{2\,b^2\,d}-\frac{a\,f^3\,x^3\,\text{Sinh}[c]}{2\,b^2\,d}+\left(d^3\,e^3-3\,d^2\,e^2\,f+6\,d\,e\,f^2-6\,f^3\right)\left(-\frac{a\,\text{Cosh}[c]}{2\,b^2\,d^4}-\frac{a\,\text{Sinh}[c]}{2\,b^2\,d^4}\right)-$$

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

$$\frac{1}{2\,b^2\,d^3}3\,x\,\big(a\,d^2\,e^2\,f\,\text{Cosh}[c]-2\,a\,d\,e\,f^2\,\text{Cosh}[c]+2\,a\,f^3\,\text{Cosh}[c]+$$

$$a\,d^2\,e^2\,f\,\text{Sinh}[c]-2\,a\,d\,e\,f^2\,\text{Sinh}[c]+2\,a\,f^3\,\text{Sinh}[c]\big)\Bigg)\,(\text{Cosh}[d\,x]+\text{Sinh}[d\,x])+$$

$$\Bigg(-\frac{f^3\,x^3\,\text{Cosh}[2\,c]}{8\,b\,d}+\frac{f^3\,x^3\,\text{Sinh}[2\,c]}{8\,b\,d}+\left(4\,d^3\,e^3+6\,d^2\,e^2\,f+6\,d\,e\,f^2+3\,f^3\right)\left(-\frac{\text{Cosh}[2\,c]}{32\,b\,d^4}+\frac{\text{Sinh}[2\,c]}{32\,b\,d^4}\right)+$$

$$\left(2\,d^2\,e^2\,f+2\,d\,e\,f^2+f^3\right)\left(-\frac{3\,x\,\text{Cosh}[2\,c]}{16\,b\,d^3}+\frac{3\,x\,\text{Sinh}[2\,c]}{16\,b\,d^3}\right)+$$

$$\left(2\,d\,e\,f^2+f^3\right)\left(-\frac{3\,x^2\,\text{Cosh}[2\,c]}{16\,b\,d^2}+\frac{3\,x^2\,\text{Sinh}[2\,c]}{16\,b\,d^2}\right)\Bigg)\,(\text{Cosh}[2\,d\,x]-\text{Sinh}[2\,d\,x])+$$

$$\Bigg(\frac{f^3\,x^3\,\text{Cosh}[2\,c]}{8\,b\,d}+\frac{f^3\,x^3\,\text{Sinh}[2\,c]}{8\,b\,d}+\left(4\,d^3\,e^3-6\,d^2\,e^2\,f+6\,d\,e\,f^2-3\,f^3\right)\left(\frac{\text{Cosh}[2\,c]}{32\,b\,d^4}+\frac{\text{Sinh}[2\,c]}{32\,b\,d^4}\right)+$$

$$\frac{1}{16\,b\,d^2}3\,x^2\left(2\,d\,e\,f^2\,\text{Cosh}[2\,c]-f^3\,\text{Cosh}[2\,c]+2\,d\,e\,f^2\,\text{Sinh}[2\,c]-f^3\,\text{Sinh}[2\,c]\right)+$$

$$\frac{1}{16\,b\,d^3}3\,x\,\Big(2\,d^2\,e^2\,f\,\text{Cosh}[2\,c]-2\,d\,e\,f^2\,\text{Cosh}[2\,c]+f^3\,\text{Cosh}[2\,c]+2\,d^2\,e^2\,f\,\text{Sinh}[2\,c]-2\,d\,e\,f^2\,\text{Sinh}[2\,c]+f^3\,\text{Sinh}[2\,c]\Big)\,\big(\text{Cosh}[2\,d\,x]+\text{Sinh}[2\,d\,x]\big)$$

Problem 234: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 522 leaves, 21 steps):

$$-\frac{f^2\,x}{4\,b\,d^2}+\frac{a^2\,(e+f\,x)^3}{3\,b^3\,f}-\frac{(e+f\,x)^3}{6\,b\,f}-\frac{2\,a\,f^2\,\text{Cosh}[c+d\,x]}{b^2\,d^3}-\frac{a\,(e+f\,x)^2\,\text{Cosh}[c+d\,x]}{b^2\,d}-\frac{a^3\,(e+f\,x)^2\,\text{Log}\Big[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\Big]}{b^3\,\sqrt{a^2+b^2}\,d}+\frac{a^3\,(e+f\,x)^2\,\text{Log}\Big[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\Big]}{b^3\,\sqrt{a^2+b^2}\,d}-\frac{2\,a^3\,f\,(e+f\,x)\,\text{PolyLog}\Big[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\Big]}{b^3\,\sqrt{a^2+b^2}\,d^2}+\frac{2\,a^3\,f\,(e+f\,x)\,\text{PolyLog}\Big[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\Big]}{b^3\,\sqrt{a^2+b^2}\,d^2}+\frac{2\,a^3\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\Big]}{b^3\,\sqrt{a^2+b^2}\,d^3}-\frac{2\,a^3\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\Big]}{b^3\,\sqrt{a^2+b^2}\,d^3}+\frac{2\,a\,f\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{b^2\,d^2}+\frac{f^2\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{4\,b\,d^3}+\frac{(e+f\,x)^2\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{2\,b\,d}-\frac{f\,(e+f\,x)\,\text{Sinh}[c+d\,x]^2}{2\,b\,d^2}$$

Result (type 4, 1612 leaves):

$$-\frac{1}{b^3 d^3} a^3 \left(\frac{2 d^2 e^2 \operatorname{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}} + \frac{2 d^2 e\, e^c f x \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2c}}}\right]}{\sqrt{(a^2+b^2) e^{2c}}} + \right.$$

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

$$\frac{d^2 e^c f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2c}}}\right]}{\sqrt{(a^2+b^2) e^{2c}}} + \frac{2 d\, e^c f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{2c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2c}}}\right]}{\sqrt{(a^2+b^2) e^{2c}}} -$$

$$\frac{2 d\, e^c f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{2c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2c}}}\right]}{\sqrt{(a^2+b^2) e^{2c}}} -$$

$$\left.\frac{2 e^c f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2c}}}\right]}{\sqrt{(a^2+b^2) e^{2c}}} + \frac{2 e^c f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2c}}}\right]}{\sqrt{(a^2+b^2) e^{2c}}}\right) +$$

$$\left(\frac{\operatorname{Cosh}[2c+2dx]}{48 b^3 d^3} - \frac{\operatorname{Sinh}[2c+2dx]}{48 b^3 d^3}\right) \left(-6 b^2 d^2 e^2 - 6 b^2 d e f - 3 b^2 f^2 - 12 b^2 d^2 e f x - \right.$$
$$6 b^2 d f^2 x - 6 b^2 d^2 f^2 x^2 - 24 a b d^2 e^2 \operatorname{Cosh}[c+dx] - 48 a b d e f \operatorname{Cosh}[c+dx] -$$
$$48 a b f^2 \operatorname{Cosh}[c+dx] - 48 a b d^2 e f x \operatorname{Cosh}[c+dx] - 48 a b d f^2 x \operatorname{Cosh}[c+dx] -$$
$$24 a b d^2 f^2 x^2 \operatorname{Cosh}[c+dx] + 48 a^2 d^3 e^2 x \operatorname{Cosh}[2c+2dx] - 24 b^2 d^3 e^2 x \operatorname{Cosh}[2c+2dx] +$$
$$48 a^2 d^3 e f x^2 \operatorname{Cosh}[2c+2dx] - 24 b^2 d^3 e f x^2 \operatorname{Cosh}[2c+2dx] +$$
$$16 a^2 d^3 f^2 x^3 \operatorname{Cosh}[2c+2dx] - 8 b^2 d^3 f^2 x^3 \operatorname{Cosh}[2c+2dx] - 24 a b d^2 e^2 \operatorname{Cosh}[3c+3dx] +$$
$$48 a b d e f \operatorname{Cosh}[3c+3dx] - 48 a b f^2 \operatorname{Cosh}[3c+3dx] - 48 a b d^2 e f x \operatorname{Cosh}[3c+3dx] +$$
$$48 a b d f^2 x \operatorname{Cosh}[3c+3dx] - 24 a b d^2 f^2 x^2 \operatorname{Cosh}[3c+3dx] + 6 b^2 d^2 e^2 \operatorname{Cosh}[4c+4dx] -$$
$$6 b^2 d e f \operatorname{Cosh}[4c+4dx] + 3 b^2 f^2 \operatorname{Cosh}[4c+4dx] + 12 b^2 d^2 e f x \operatorname{Cosh}[4c+4dx] -$$
$$6 b^2 d f^2 x \operatorname{Cosh}[4c+4dx] + 6 b^2 d^2 f^2 x^2 \operatorname{Cosh}[4c+4dx] - 24 a b d^2 e^2 \operatorname{Sinh}[c+dx] -$$
$$48 a b d e f \operatorname{Sinh}[c+dx] - 48 a b f^2 \operatorname{Sinh}[c+dx] - 48 a b d^2 e f x \operatorname{Sinh}[c+dx] -$$
$$48 a b d f^2 x \operatorname{Sinh}[c+dx] - 24 a b d^2 f^2 x^2 \operatorname{Sinh}[c+dx] + 48 a^2 d^3 e^2 x \operatorname{Sinh}[2c+2dx] -$$
$$24 b^2 d^3 e^2 x \operatorname{Sinh}[2c+2dx] + 48 a^2 d^3 e f x^2 \operatorname{Sinh}[2c+2dx] - 24 b^2 d^3 e f x^2 \operatorname{Sinh}[2c+2dx] +$$
$$16 a^2 d^3 f^2 x^3 \operatorname{Sinh}[2c+2dx] - 8 b^2 d^3 f^2 x^3 \operatorname{Sinh}[2c+2dx] - 24 a b d^2 e^2 \operatorname{Sinh}[3c+3dx] +$$
$$48 a b d e f \operatorname{Sinh}[3c+3dx] - 48 a b f^2 \operatorname{Sinh}[3c+3dx] - 48 a b d^2 e f x \operatorname{Sinh}[3c+3dx] +$$
$$48 a b d f^2 x \operatorname{Sinh}[3c+3dx] - 24 a b d^2 f^2 x^2 \operatorname{Sinh}[3c+3dx] +$$
$$6 b^2 d^2 e^2 \operatorname{Sinh}[4c+4dx] - 6 b^2 d e f \operatorname{Sinh}[4c+4dx] + 3 b^2 f^2 \operatorname{Sinh}[4c+4dx] +$$
$$\left.12 b^2 d^2 e f x \operatorname{Sinh}[4c+4dx] - 6 b^2 d f^2 x \operatorname{Sinh}[4c+4dx] + 6 b^2 d^2 f^2 x^2 \operatorname{Sinh}[4c+4dx]\right)$$

Problem 237: Attempted integration timed out after 120 seconds.

$$\int \frac{\operatorname{Sinh}[c+dx]^3}{(e+fx)(a+b\operatorname{Sinh}[c+dx])} \, dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 238: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 605 leaves, 22 steps):

$$-\frac{2\,(e+f\,x)^3\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{b\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d}+\frac{b\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d}-\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a\,d^2}+\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a\,d^2}-\frac{3\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d^2}+\frac{3\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d^2}+\frac{6\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a\,d^3}-\frac{6\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a\,d^3}+\frac{6\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d^3}-\frac{6\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d^3}-\frac{6\,f^3\,\text{PolyLog}\left[4,-e^{c+d\,x}\right]}{a\,d^4}+\frac{6\,f^3\,\text{PolyLog}\left[4,e^{c+d\,x}\right]}{a\,d^4}-\frac{6\,b\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d^4}+\frac{6\,b\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\sqrt{a^2+b^2}\,d^4}$$

Result (type 4, 1336 leaves):

$$\frac{1}{a\,d^4}\left(-2\,d^3\,e^3\,\text{ArcTanh}\left[e^{c+d\,x}\right]+3\,d^3\,e^2\,f\,x\,\text{Log}\left[1-e^{c+d\,x}\right]+3\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]+d^3\,f^3\,x^3\,\text{Log}\left[1-e^{c+d\,x}\right]-3\,d^3\,e^2\,f\,x\,\text{Log}\left[1+e^{c+d\,x}\right]-3\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]-d^3\,f^3\,x^3\,\text{Log}\left[1+e^{c+d\,x}\right]-3\,d^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]+3\,d^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,e^{c+d\,x}\right]+6\,d\,e\,f^2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]+6\,d\,f^3\,x\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]-6\,d\,e\,f^2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]-6\,d\,f^3\,x\,\text{PolyLog}\left[3,e^{c+d\,x}\right]-6\,f^3\,\text{PolyLog}\left[4,-e^{c+d\,x}\right]+6\,f^3\,\text{PolyLog}\left[4,e^{c+d\,x}\right]\right)-$$

$$\frac{1}{a\sqrt{-a^2-b^2}\,d^4\sqrt{(a^2+b^2)\,e^{2c}}}\,b\left(2\,d^3\,e^3\sqrt{(a^2+b^2)\,e^{2c}}\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]+3\sqrt{-a^2-b^2}\,d^3\,e^2\,e^c\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+3\sqrt{-a^2-b^2}\,d^3\,e\,e^c\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+\sqrt{-a^2-b^2}\,d^3\,e^c\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-3\sqrt{-a^2-b^2}\,d^3\,e^2\,e^c\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-3\sqrt{-a^2-b^2}\,d^3\,e\,e^c\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-\sqrt{-a^2-b^2}\,d^3\,e^c\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+3\sqrt{-a^2-b^2}\,d^2\,e^c\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-3\sqrt{-a^2-b^2}\,d^2\,e^c\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-6\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-6\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+6\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+6\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+6\sqrt{-a^2-b^2}\,e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-6\sqrt{-a^2-b^2}\,e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]\right)$$

Problem 243: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 745 leaves, 29 steps):

$$-\frac{(e+f x)^3}{a d}+\frac{2 b (e+f x)^3 \text{ArcTanh}\left[e^{c+d x}\right]}{a^2 d}-\frac{(e+f x)^3 \text{Coth}[c+d x]}{a d}+\frac{b^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d}-\frac{b^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d}+\frac{3 f (e+f x)^2 \text{Log}\left[1-e^{2 (c+d x)}\right]}{a d^2}+\frac{3 b f (e+f x)^2 \text{PolyLog}\left[2,-e^{c+d x}\right]}{a^2 d^2}-\frac{3 b f (e+f x)^2 \text{PolyLog}\left[2,e^{c+d x}\right]}{a^2 d^2}+\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d^2}-\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d^2}+\frac{3 f^2 (e+f x) \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{a d^3}-\frac{6 b f^2 (e+f x) \text{PolyLog}\left[3,-e^{c+d x}\right]}{a^2 d^3}+\frac{6 b f^2 (e+f x) \text{PolyLog}\left[3,e^{c+d x}\right]}{a^2 d^3}-\frac{6 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d^3}+\frac{6 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d^3}-\frac{3 f^3 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]}{2 a d^4}+\frac{6 b f^3 \text{PolyLog}\left[4,-e^{c+d x}\right]}{a^2 d^4}-\frac{6 b f^3 \text{PolyLog}\left[4,e^{c+d x}\right]}{a^2 d^4}+\frac{6 b^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d^4}-\frac{6 b^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2} d^4}$$

Result (type 4, 2216 leaves):

$$-\frac{1}{2 a^2 d^4 \left(-1+e^{2 c}\right)}\Big(12 a d^3 e^2 e^{2 c} f x+12 a d^3 e e^{2 c} f^2 x^2+4 a d^3 e^{2 c} f^3 x^3+4 b d^3 e^3 \text{ArcTanh}\left[e^{c+d x}\right]-4 b d^3 e^3 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]-6 b d^3 e^2 f x \text{Log}\left[1-e^{c+d x}\right]+6 b d^3 e^2 e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]-6 b d^3 e f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+6 b d^3 e e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-2 b d^3 f^3 x^3 \text{Log}\left[1-e^{c+d x}\right]+2 b d^3 e^{2 c} f^3 x^3 \text{Log}\left[1-e^{c+d x}\right]+6 b d^3 e^2 f x \text{Log}\left[1+e^{c+d x}\right]-6 b d^3 e^2 e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]+6 b d^3 e f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-6 b d^3 e e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+2 b d^3 f^3 x^3 \text{Log}\left[1+e^{c+d x}\right]-2 b d^3 e^{2 c} f^3 x^3 \text{Log}\left[1+e^{c+d x}\right]+6 a d^2 e^2 f \text{Log}\left[1-e^{2 (c+d x)}\right]-6 a d^2 e^2 e^{2 c} f \text{Log}\left[1-e^{2 (c+d x)}\right]+12 a d^2 e f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]-12 a d^2 e e^{2 c} f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]+6 a d^2 f^3 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-6 a d^2 e^{2 c} f^3 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-6 b d^2 \left(-1+e^{2 c}\right) f (e+f x)^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+6 b d^2 \left(-1+e^{2 c}\right) f (e+f x)^2 \text{PolyLog}\left[2,e^{c+d x}\right]+6 a d e f^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 a d e e^{2 c} f^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 a d f^3 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 a d e^{2 c} f^3 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-12 b d e f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+12 b d e e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-12 b d f^3 x \text{PolyLog}\left[3,-e^{c+d x}\right]+12 b d e^{2 c} f^3 x \text{PolyLog}\left[3,-e^{c+d x}\right]+12 b d e f^2 \text{PolyLog}\left[3,e^{c+d x}\right]-12 b d e e^{2 c} f^2 \text{PolyLog}\left[3,e^{c+d x}\right]+12 b d f^3 x \text{PolyLog}\left[3,e^{c+d x}\right]-12 b d e^{2 c} f^3 x \text{PolyLog}\left[3,e^{c+d x}\right]-3 a f^3 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]+3 a e^{2 c} f^3 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]+12 b f^3 \text{PolyLog}\left[4,-e^{c+d x}\right]-12 b e^{2 c} f^3 \text{PolyLog}\left[4,-e^{c+d x}\right]-12 b f^3 \text{PolyLog}\left[4,e^{c+d x}\right]+12 b e^{2 c} f^3 \text{PolyLog}\left[4,e^{c+d x}\right]\Big)+$$

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

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

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

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

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

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

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

$$6 \sqrt{-a^2-b^2}\ d\, e\, e^c f^2 \text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$

$$6 \sqrt{-a^2-b^2}\ d\, e^c f^3 x \,\text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$

$$6 \sqrt{-a^2-b^2}\ d\, e\, e^c f^2 \text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$

$$6 \sqrt{-a^2-b^2}\ d\, e^c f^3 x \,\text{PolyLog}\left[3,-\frac{b\, e^{2 c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$

$$6 \sqrt{-a^2-b^2}\ e^c f^3 \text{PolyLog}\left[4,-\frac{b\, e^{2 c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$

$$\left.6 \sqrt{-a^2-b^2}\ e^c f^3 \text{PolyLog}\left[4,-\frac{b\, e^{2 c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\right)+$$

$$\frac{1}{2 a d}\text{Sech}\left[\frac{c}{2}\right] \text{Sech}\left[\frac{c}{2}+\frac{d x}{2}\right] \left(-e^3 \,\text{Sinh}\left[\frac{d x}{2}\right]-3 e^2 f x \,\text{Sinh}\left[\frac{d x}{2}\right]-\right.$$

$$\left.3 e f^2 x^2 \,\text{Sinh}\left[\frac{d x}{2}\right]-f^3 x^3 \,\text{Sinh}\left[\frac{d x}{2}\right]\right)+\frac{1}{2 a d}$$

$$\text{Csch}\left[\frac{c}{2}\right] \text{Csch}\left[\frac{c}{2}+\frac{d x}{2}\right] \left(e^3 \,\text{Sinh}\left[\frac{d x}{2}\right]+3 e^2 f x \,\text{Sinh}\left[\frac{d x}{2}\right]+3 e f^2 x^2 \,\text{Sinh}\left[\frac{d x}{2}\right]+f^3 x^3 \,\text{Sinh}\left[\frac{d x}{2}\right]\right)$$

Problem 245: Result unnecessarily involves complex numbers and more than

twice size of optimal antiderivative.

$$\int \frac{(e+f x)\,\mathrm{Csch}[c+d x]^2}{a+b\,\mathrm{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 306 leaves, 17 steps):

$$\frac{2 b (e+f x)\,\mathrm{ArcTanh}\left[e^{c+d x}\right]}{a^2 d}-\frac{(e+f x)\,\mathrm{Coth}[c+d x]}{a d}+\frac{b^2 (e+f x)\,\mathrm{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2}\, d}-\frac{b^2 (e+f x)\,\mathrm{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2}\, d}+\frac{f\,\mathrm{Log}[\mathrm{Sinh}[c+d x]]}{a d^2}+\frac{b f\,\mathrm{PolyLog}\left[2,-e^{c+d x}\right]}{a^2 d^2}-\frac{b f\,\mathrm{PolyLog}\left[2,e^{c+d x}\right]}{a^2 d^2}+\frac{b^2 f\,\mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2}\, d^2}-\frac{b^2 f\,\mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \sqrt{a^2+b^2}\, d^2}$$

Result (type 4, 617 leaves):

$$\frac{1}{2 a d^2}\left(-d e\,\mathrm{Cosh}\left[\frac{1}{2}(c+d x)\right]+c f\,\mathrm{Cosh}\left[\frac{1}{2}(c+d x)\right]-f (c+d x)\,\mathrm{Cosh}\left[\frac{1}{2}(c+d x)\right]\right)\mathrm{Csch}\left[\frac{1}{2}(c+d x)\right]+\frac{f\,\mathrm{Log}[\mathrm{Sinh}[c+d x]]}{a d^2}-\frac{b e\,\mathrm{Log}\left[\mathrm{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^2 d}+\frac{b c f\,\mathrm{Log}\left[\mathrm{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^2 d^2}+\frac{1}{a^2 d^2} i b f\left(i (c+d x)\left(\mathrm{Log}\left[1-e^{-c-d x}\right]-\mathrm{Log}\left[1+e^{-c-d x}\right]\right)+i\left(\mathrm{PolyLog}\left[2,-e^{-c-d x}\right]-\mathrm{PolyLog}\left[2,e^{-c-d x}\right]\right)\right)+\frac{1}{a^2 \sqrt{-\left(a^2+b^2\right)^2}\, d^2} b^2 \left(2 \sqrt{a^2+b^2}\, d e\,\mathrm{ArcTan}\left[\frac{a+b\,\mathrm{Cosh}[c+d x]+b\,\mathrm{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]-2 \sqrt{a^2+b^2}\, c f\,\mathrm{ArcTan}\left[\frac{a+b\,\mathrm{Cosh}[c+d x]+b\,\mathrm{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]+\sqrt{-a^2-b^2}\, f (c+d x)\,\mathrm{Log}\left[1+\frac{b (\mathrm{Cosh}[c+d x]+\mathrm{Sinh}[c+d x])}{a-\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\, f (c+d x)\,\mathrm{Log}\left[1+\frac{b (\mathrm{Cosh}[c+d x]+\mathrm{Sinh}[c+d x])}{a+\sqrt{a^2+b^2}}\right]+\sqrt{-a^2-b^2}\, f\,\mathrm{PolyLog}\left[2,\frac{b (\mathrm{Cosh}[c+d x]+\mathrm{Sinh}[c+d x])}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\, f\,\mathrm{PolyLog}\left[2,-\frac{b (\mathrm{Cosh}[c+d x]+\mathrm{Sinh}[c+d x])}{a+\sqrt{a^2+b^2}}\right]\right)+\frac{1}{2 a d^2}\mathrm{Sech}\left[\frac{1}{2}(c+d x)\right]\left(-d e\,\mathrm{Sinh}\left[\frac{1}{2}(c+d x)\right]+c f\,\mathrm{Sinh}\left[\frac{1}{2}(c+d x)\right]-f (c+d x)\,\mathrm{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)$$

Problem 247: Attempted integration timed out after 120 seconds.

$$\int \frac{\mathrm{Csch}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\mathrm{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\mathrm{Int}\left[\frac{\mathrm{Csch}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\mathrm{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 248: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^3\,\mathrm{Csch}[c+d\,x]^3}{a+b\,\mathrm{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1053 leaves, 45 steps):

$$\frac{b\,(e+f\,x)^3}{a^2\,d}-\frac{6\,f^2\,(e+f\,x)\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d^3}+\frac{(e+f\,x)^3\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-$$
$$\frac{2\,b^2\,(e+f\,x)^3\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a^3\,d}+\frac{b\,(e+f\,x)^3\,\text{Coth}[c+d\,x]}{a^2\,d}-\frac{3\,f\,(e+f\,x)^2\,\text{Csch}[c+d\,x]}{2\,a\,d^2}-$$
$$\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{2\,a\,d}-\frac{b^3\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d}+$$
$$\frac{b^3\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d}-\frac{3\,b\,f\,(e+f\,x)^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a^2\,d^2}-\frac{3\,f^3\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a\,d^4}+$$
$$\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{2\,a\,d^2}-\frac{3\,b^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a^3\,d^2}+$$
$$\frac{3\,f^3\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a\,d^4}-\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{2\,a\,d^2}+\frac{3\,b^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a^3\,d^2}-$$
$$\frac{3\,b^3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^2}+\frac{3\,b^3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^2}-$$
$$\frac{3\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]}{a^2\,d^3}-\frac{3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a\,d^3}+$$
$$\frac{6\,b^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a^3\,d^3}+\frac{3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a\,d^3}-$$
$$\frac{6\,b^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a^3\,d^3}+\frac{6\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^3}-$$
$$\frac{6\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^3}+\frac{3\,b\,f^3\,\text{PolyLog}\left[3,e^{2\,(c+d\,x)}\right]}{2\,a^2\,d^4}+$$
$$\frac{3\,f^3\,\text{PolyLog}\left[4,-e^{c+d\,x}\right]}{a\,d^4}-\frac{6\,b^2\,f^3\,\text{PolyLog}\left[4,-e^{c+d\,x}\right]}{a^3\,d^4}-\frac{3\,f^3\,\text{PolyLog}\left[4,e^{c+d\,x}\right]}{a\,d^4}+$$
$$\frac{6\,b^2\,f^3\,\text{PolyLog}\left[4,e^{c+d\,x}\right]}{a^3\,d^4}-\frac{6\,b^3\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^4}+\frac{6\,b^3\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^4}$$

Result (type 4, 2727 leaves):

$$-\frac{e^3\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{2\,a\,d}+\frac{b^2\,e^3\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a^3\,d}+\frac{3\,e\,f^2\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a\,d^3}-\frac{1}{2\,a\,d^2}$$
$$3\,e^2\,f\,\left(-c\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-i\,\left(\left(i\,c+i\,d\,x\right)\,\left(\text{Log}\left[1-e^{i\,(i\,c+i\,d\,x)}\right]-\text{Log}\left[1+e^{i\,(i\,c+i\,d\,x)}\right]\right)+\right.\right.$$
$$\left.\left.i\,\left(\text{PolyLog}\left[2,-e^{i\,(i\,c+i\,d\,x)}\right]-\text{PolyLog}\left[2,e^{i\,(i\,c+i\,d\,x)}\right]\right)\right)\right)+\frac{1}{a^3\,d^2}$$
$$3\,b^2\,e^2\,f\,\left(-c\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-i\,\left(\left(i\,c+i\,d\,x\right)\,\left(\text{Log}\left[1-e^{i\,(i\,c+i\,d\,x)}\right]-\text{Log}\left[1+e^{i\,(i\,c+i\,d\,x)}\right]\right)+\right.\right.$$

$$\left.\left.\left.i\left(\text{PolyLog}\left[2,-e^{i(i c+i d x)}\right]-\text{PolyLog}\left[2,e^{i(i c+i d x)}\right]\right)\right)\right)+\frac{1}{a d^4}$$

$$3 f^3\left(-c \text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]-i\left((i c+i d x)\left(\text{Log}\left[1-e^{i(i c+i d x)}\right]-\text{Log}\left[1+e^{i(i c+i d x)}\right]\right)+\right.\right.$$

$$\left.\left.i\left(\text{PolyLog}\left[2,-e^{i(i c+i d x)}\right]-\text{PolyLog}\left[2,e^{i(i c+i d x)}\right]\right)\right)\right)+$$

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

$$\left.6 d\left(-1+e^{2 c}\right) x \text{PolyLog}\left[2, e^{2(c+d x)}\right]+3\left(-1+e^{2 c}\right) \text{PolyLog}\left[3, e^{2(c+d x)}\right]\right)+\frac{1}{a d^3}$$

$$3 e f^2\left(d^2 x^2 \text{ArcTanh}[\text{Cosh}[c+d x]+\text{Sinh}[c+d x]]+d x \text{PolyLog}[2,-\text{Cosh}[c+d x]-\text{Sinh}[c+d x]]-\right.$$
$$d x \text{PolyLog}[2, \text{Cosh}[c+d x]+\text{Sinh}[c+d x]]-$$
$$\left.\text{PolyLog}[3,-\text{Cosh}[c+d x]-\text{Sinh}[c+d x]]+\text{PolyLog}[3, \text{Cosh}[c+d x]+\text{Sinh}[c+d x]]\right)-$$

$$\frac{1}{a^3 d^3} 6 b^2 e f^2\left(d^2 x^2 \text{ArcTanh}[\text{Cosh}[c+d x]+\text{Sinh}[c+d x]]+\right.$$
$$d x \text{PolyLog}[2,-\text{Cosh}[c+d x]-\text{Sinh}[c+d x]]-d x \text{PolyLog}[2, \text{Cosh}[c+d x]+\text{Sinh}[c+d x]]-$$
$$\left.\text{PolyLog}[3,-\text{Cosh}[c+d x]-\text{Sinh}[c+d x]]+\text{PolyLog}[3, \text{Cosh}[c+d x]+\text{Sinh}[c+d x]]\right)-$$

$$\frac{1}{2 a d^4} f^3\left(d^3 x^3 \text{Log}\left[1-e^{c+d x}\right]-d^3 x^3 \text{Log}\left[1+e^{c+d x}\right]-3 d^2 x^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+\right.$$
$$3 d^2 x^2 \text{PolyLog}\left[2, e^{c+d x}\right]+6 d x \text{PolyLog}\left[3,-e^{c+d x}\right]-$$
$$\left.6 d x \text{PolyLog}\left[3, e^{c+d x}\right]-6 \text{PolyLog}\left[4,-e^{c+d x}\right]+6 \text{PolyLog}\left[4, e^{c+d x}\right]\right)+$$

$$\frac{1}{a^3 d^4} b^2 f^3\left(d^3 x^3 \text{Log}\left[1-e^{c+d x}\right]-d^3 x^3 \text{Log}\left[1+e^{c+d x}\right]-3 d^2 x^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+\right.$$
$$3 d^2 x^2 \text{PolyLog}\left[2, e^{c+d x}\right]+6 d x \text{PolyLog}\left[3,-e^{c+d x}\right]-$$
$$\left.6 d x \text{PolyLog}\left[3, e^{c+d x}\right]-6 \text{PolyLog}\left[4,-e^{c+d x}\right]+6 \text{PolyLog}\left[4, e^{c+d x}\right]\right)-$$

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

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

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

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

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

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

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

$$6\sqrt{-a^2-b^2}\; d\, e\, e^c f^2 \,\text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\; d\, e^c f^3 x\, \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\; d\, e\, e^c f^2 \,\text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\; d\, e^c f^3 x\, \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\; e^c f^3 \,\text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\; e^c f^3 \,\text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]\Bigg)+$$

$$\left(3\, b\, e^2 f\, \text{Csch}[c]\, \left(-d\, x\, \text{Cosh}[c]+\text{Log}[\text{Cosh}[d\, x]\, \text{Sinh}[c]+\text{Cosh}[c]\, \text{Sinh}[d\, x]]\, \text{Sinh}[c]\right)\right)\Big/$$
$$\left(a^2 d^2 \left(-\text{Cosh}[c]^2+\text{Sinh}[c]^2\right)\right)+$$

$$\frac{1}{4\, a^2 d^2}\text{Csch}[c]\, \text{Csch}[c+d\, x]^2 \,\big(2\, b\, d\, e^3 \,\text{Cosh}[c]+6\, b\, d\, e^2 f\, x\, \text{Cosh}[c]+$$
$$6\, b\, d\, e\, f^2 x^2 \,\text{Cosh}[c]+2\, b\, d\, f^3 x^3 \,\text{Cosh}[c]+3\, a\, e^2 f\, \text{Cosh}[d\, x]+6\, a\, e\, f^2 x\, \text{Cosh}[d\, x]+$$
$$3\, a\, f^3 x^2 \,\text{Cosh}[d\, x]-3\, a\, e^2 f\, \text{Cosh}[2\, c+d\, x]-6\, a\, e\, f^2 x\, \text{Cosh}[2\, c+d\, x]-$$
$$3\, a\, f^3 x^2 \,\text{Cosh}[2\, c+d\, x]-2\, b\, d\, e^3 \,\text{Cosh}[c+2\, d\, x]-6\, b\, d\, e^2 f\, x\, \text{Cosh}[c+2\, d\, x]-$$
$$6\, b\, d\, e\, f^2 x^2 \,\text{Cosh}[c+2\, d\, x]-2\, b\, d\, f^3 x^3 \,\text{Cosh}[c+2\, d\, x]+a\, d\, e^3 \,\text{Sinh}[d\, x]+$$
$$3\, a\, d\, e^2 f\, x\, \text{Sinh}[d\, x]+3\, a\, d\, e\, f^2 x^2 \,\text{Sinh}[d\, x]+a\, d\, f^3 x^3 \,\text{Sinh}[d\, x]-a\, d\, e^3 \,\text{Sinh}[2\, c+d\, x]-$$
$$3\, a\, d\, e^2 f\, x\, \text{Sinh}[2\, c+d\, x]-3\, a\, d\, e\, f^2 x^2 \,\text{Sinh}[2\, c+d\, x]-a\, d\, f^3 x^3 \,\text{Sinh}[2\, c+d\, x]\big)-$$

$$\Bigg(3\, b\, e\, f^2 \,\text{Csch}[c]\, \text{Sech}[c]\, \Bigg(-d^2 e^{-\text{ArcTanh}[\text{Tanh}[c]]}\, x^2+\frac{1}{\sqrt{1-\text{Tanh}[c]^2}}$$
$$i\, \left(-d\, x\, \left(-\pi+2\, i\, \text{ArcTanh}[\text{Tanh}[c]]\right)-\pi\, \text{Log}\left[1+e^{2\, d\, x}\right]-2\, \left(i\, d\, x+i\, \text{ArcTanh}[\text{Tanh}[c]]\right)\right.$$
$$\text{Log}\left[1-e^{2\, i\, (i\, d\, x+i\, \text{ArcTanh}[\text{Tanh}[c]])}\right]+\pi\, \text{Log}[\text{Cosh}[d\, x]]+2\, i\, \text{ArcTanh}[\text{Tanh}[c]]$$
$$\left.\text{Log}[i\, \text{Sinh}[d\, x+\text{ArcTanh}[\text{Tanh}[c]]]]+i\, \text{PolyLog}\left[2,\, e^{2\, i\, (i\, d\, x+i\, \text{ArcTanh}[\text{Tanh}[c]])}\right]\right)$$
$$\text{Tanh}[c]\Bigg)\Bigg)\Big/\left(a^2 d^3 \sqrt{\text{Sech}[c]^2 \left(\text{Cosh}[c]^2-\text{Sinh}[c]^2\right)}\right)$$

Problem 249: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\, x)^2 \,\text{Csch}[c+d\, x]^3}{a+b\, \text{Sinh}[c+d\, x]}\, dx$$

Optimal (type 4, 725 leaves, 34 steps):

$$\frac{b\,(e+f\,x)^2}{a^2\,d}+\frac{(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{2\,b^2\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a^3\,d}-$$
$$\frac{f^2\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a\,d^3}+\frac{b\,(e+f\,x)^2\,\text{Coth}[c+d\,x]}{a^2\,d}-\frac{f\,(e+f\,x)\,\text{Csch}[c+d\,x]}{a\,d^2}-$$
$$\frac{(e+f\,x)^2\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{2\,a\,d}-\frac{b^3\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d}+$$
$$\frac{b^3\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d}-\frac{2\,b\,f\,(e+f\,x)\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a^2\,d^2}+\frac{f\,(e+f\,x)\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a\,d^2}-$$
$$\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a^3\,d^2}-\frac{f\,(e+f\,x)\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a\,d^2}+$$
$$\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a^3\,d^2}-\frac{2\,b^3\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^2}+$$
$$\frac{2\,b^3\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^2}-\frac{b\,f^2\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]}{a^2\,d^3}-$$
$$\frac{f^2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a\,d^3}+\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a^3\,d^3}+\frac{f^2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a\,d^3}-$$
$$\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a^3\,d^3}+\frac{2\,b^3\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^3}-\frac{2\,b^3\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\sqrt{a^2+b^2}\,d^3}$$

Result (type 4, 1798 leaves):

$$\frac{1}{2 a^3 d^3 \left(-1+e^{2 c}\right)}\Big(8 a b d^2 e\, e^{2 c} f x+4 a b d^2 e^{2 c} f^2 x^2-2 a^2 d^2 e^2 \text{ArcTanh}\left[e^{c+d x}\right]+4 b^2 d^2 e^2 \text{ArcTanh}\left[e^{c+d x}\right]+$$
$$2 a^2 d^2 e^2 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]-4 b^2 d^2 e^2 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]+4 a^2 f^2 \text{ArcTanh}\left[e^{c+d x}\right]-$$
$$4 a^2 e^{2 c} f^2 \text{ArcTanh}\left[e^{c+d x}\right]+2 a^2 d^2 e f x \text{Log}\left[1-e^{c+d x}\right]-4 b^2 d^2 e f x \text{Log}\left[1-e^{c+d x}\right]-$$
$$2 a^2 d^2 e\, e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]+4 b^2 d^2 e\, e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]+$$
$$a^2 d^2 f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-2 b^2 d^2 f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+$$
$$2 b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-2 a^2 d^2 e f x \text{Log}\left[1+e^{c+d x}\right]+4 b^2 d^2 e f x \text{Log}\left[1+e^{c+d x}\right]+$$
$$2 a^2 d^2 e\, e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]-4 b^2 d^2 e\, e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]-a^2 d^2 f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+$$
$$2 b^2 d^2 f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-2 b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+$$
$$4 a b d e f \text{Log}\left[1-e^{2 (c+d x)}\right]-4 a b d e\, e^{2 c} f \text{Log}\left[1-e^{2 (c+d x)}\right]+4 a b d f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$4 a b d e^{2 c} f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]+2 \left(a^2-2 b^2\right) d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-e^{c+d x}\right]-$$
$$2 \left(a^2-2 b^2\right) d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,e^{c+d x}\right]+2 a b f^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$2 a b e^{2 c} f^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+2 a^2 f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-4 b^2 f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-$$
$$2 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+4 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-2 a^2 f^2 \text{PolyLog}\left[3,e^{c+d x}\right]+$$
$$4 b^2 f^2 \text{PolyLog}\left[3,e^{c+d x}\right]+2 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{c+d x}\right]-4 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{c+d x}\right]\Big)-$$

$$\frac{1}{a^3 d^3} b^3 \left(\frac{2 d^2 e^2 \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{2 d^2 e\, e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}+\right.$$
$$\frac{d^2 e^c f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-\frac{2 d^2 e\, e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-$$
$$\frac{d^2 e^c f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}+\frac{2 d e^c f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-$$
$$\frac{2 d e^c f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-\frac{2 e^c f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}+$$
$$\left.\frac{2 e^c f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right)+\frac{1}{4 a^2 d^2} \text{Csch}[c] \text{Csch}[c+d x]^2$$
$$\big(2 b d e^2 \text{Cosh}[c]+4 b d e f x \text{Cosh}[c]+2 b d f^2 x^2 \text{Cosh}[c]+2 a e f \text{Cosh}[d x]+$$
$$2 a f^2 x \text{Cosh}[d x]-2 a e f \text{Cosh}[2 c+d x]-2 a f^2 x \text{Cosh}[2 c+d x]-2 b d e^2 \text{Cosh}[c+2 d x]-$$
$$4 b d e f x \text{Cosh}[c+2 d x]-2 b d f^2 x^2 \text{Cosh}[c+2 d x]+a d e^2 \text{Sinh}[d x]+2 a d e f x \text{Sinh}[d x]+$$
$$a d f^2 x^2 \text{Sinh}[d x]-a d e^2 \text{Sinh}[2 c+d x]-2 a d e f x \text{Sinh}[2 c+d x]-a d f^2 x^2 \text{Sinh}[2 c+d x]\big)$$

Problem 250: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)\,\mathrm{Csch}[c+d x]^3}{a+b\,\mathrm{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 420 leaves, 24 steps):

$$\frac{(e+f x)\,\mathrm{ArcTanh}\left[e^{c+d x}\right]}{a d}-\frac{2 b^2 (e+f x)\,\mathrm{ArcTanh}\left[e^{c+d x}\right]}{a^3 d}+\frac{b (e+f x)\,\mathrm{Coth}[c+d x]}{a^2 d}-\frac{f\,\mathrm{Csch}[c+d x]}{2 a d^2}-\frac{(e+f x)\,\mathrm{Coth}[c+d x]\,\mathrm{Csch}[c+d x]}{2 a d}-\frac{b^3 (e+f x)\,\mathrm{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \sqrt{a^2+b^2}\,d}+\frac{b^3 (e+f x)\,\mathrm{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \sqrt{a^2+b^2}\,d}-\frac{b f\,\mathrm{Log}[\mathrm{Sinh}[c+d x]]}{a^2 d^2}+\frac{f\,\mathrm{PolyLog}\left[2,-e^{c+d x}\right]}{2 a d^2}-\frac{b^2 f\,\mathrm{PolyLog}\left[2,-e^{c+d x}\right]}{a^3 d^2}-\frac{f\,\mathrm{PolyLog}\left[2,e^{c+d x}\right]}{2 a d^2}+\frac{b^2 f\,\mathrm{PolyLog}\left[2,e^{c+d x}\right]}{a^3 d^2}-\frac{b^3 f\,\mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \sqrt{a^2+b^2}\,d^2}+\frac{b^3 f\,\mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \sqrt{a^2+b^2}\,d^2}$$

Result (type 4, 869 leaves):

$$\frac{1}{4 a^2 d^2}\left(2 b d e \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]-a f \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]-\right.$$
$$\left.2 b c f \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+2 b f(c+d x) \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]\right) \operatorname{Csch}\left[\frac{1}{2}(c+d x)\right]+$$
$$\frac{(-d e+c f-f(c+d x)) \operatorname{Csch}\left[\frac{1}{2}(c+d x)\right]^2}{8 a d^2}-\frac{b f \operatorname{Log}[\operatorname{Sinh}[c+d x]]}{a^2 d^2}-$$
$$\frac{e \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{2 a d}+\frac{b^2 e \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^3 d}+$$
$$\frac{c f \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{2 a d^2}-\frac{b^2 c f \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^3 d^2}+$$
$$\frac{1}{2 a d^2} i f\left(i(c+d x)\left(\operatorname{Log}\left[1-e^{-c-d x}\right]-\operatorname{Log}\left[1+e^{-c-d x}\right]\right)+\right.$$
$$\left.i\left(\operatorname{PolyLog}\left[2,-e^{-c-d x}\right]-\operatorname{PolyLog}\left[2, e^{-c-d x}\right]\right)\right)-\frac{1}{a^3 d^2} i b^2 f$$
$$\left(i(c+d x)\left(\operatorname{Log}\left[1-e^{-c-d x}\right]-\operatorname{Log}\left[1+e^{-c-d x}\right]\right)+i\left(\operatorname{PolyLog}\left[2,-e^{-c-d x}\right]-\operatorname{PolyLog}\left[2, e^{-c-d x}\right]\right)\right)-$$
$$\frac{1}{a^3 \sqrt{-\left(a^2+b^2\right)^2} d^2} b^3\left(2 \sqrt{a^2+b^2} d e \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]-\right.$$
$$2 \sqrt{a^2+b^2} c f \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]+$$
$$\sqrt{-a^2-b^2} f(c+d x) \operatorname{Log}\left[1+\frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{a-\sqrt{a^2+b^2}}\right]-$$
$$\sqrt{-a^2-b^2} f(c+d x) \operatorname{Log}\left[1+\frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{a+\sqrt{a^2+b^2}}\right]+$$
$$\sqrt{-a^2-b^2} f \operatorname{PolyLog}\left[2, \frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{-a+\sqrt{a^2+b^2}}\right]-$$
$$\left.\sqrt{-a^2-b^2} f \operatorname{PolyLog}\left[2,-\frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{a+\sqrt{a^2+b^2}}\right]\right)+$$
$$\frac{(-d e+c f-f(c+d x)) \operatorname{Sech}\left[\frac{1}{2}(c+d x)\right]^2}{8 a d^2}+\frac{1}{4 a^2 d^2} \operatorname{Sech}\left[\frac{1}{2}(c+d x)\right]$$
$$\left(2 b d e \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]+a f \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]-\right.$$
$$\left.2 b c f \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]+2 b f(c+d x) \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)$$

Problem 252: Attempted integration timed out after 120 seconds.

$$\int \frac{\operatorname{Csch}[c+d x]^3}{(e+f x)(a+b \operatorname{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 255: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)\,\text{Cosh}[c+d\,x]}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 73 leaves, 4 steps):

$$\frac{i\,(e+f\,x)^2}{2\,a\,f}-\frac{2\,i\,(e+f\,x)\,\text{Log}\left[1+i\,e^{c+d\,x}\right]}{a\,d}-\frac{2\,i\,f\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{a\,d^2}$$

Result (type 4, 252 leaves):

$$-\frac{1}{2\,a\,d^2\,(-i+\text{Sinh}[c+d\,x])}\Bigg(c^2\,f+i\,c\,f\,\pi+2\,c\,d\,f\,x+i\,d\,f\,\pi\,x+d^2\,f\,x^2+2\,f\,(2\,c-i\,\pi+2\,d\,x)\,\text{Log}\left[1-i\,e^{-c-d\,x}\right]-$$
$$4\,i\,f\,\pi\,\text{Log}\left[1+e^{c+d\,x}\right]+4\,i\,f\,\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$2\,i\,f\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,(\pi+2\,i\,(c+d\,x))\right]\right]+4\,d\,e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$
$$4\,c\,f\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-4\,f\,\text{PolyLog}\left[2,\,i\,e^{-c-d\,x}\right]\Bigg)$$
$$\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2$$

Problem 271: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^3\,\text{Sech}[c+d\,x]}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 463 leaves, 22 steps):

$$-\frac{3\,i\,f\,(e+f\,x)^2}{2\,a\,d^2}-\frac{6\,f^2\,(e+f\,x)\,\text{ArcTan}\left[e^{c+d\,x}\right]}{a\,d^3}+\frac{(e+f\,x)^3\,\text{ArcTan}\left[e^{c+d\,x}\right]}{a\,d}+\frac{3\,i\,f^2\,(e+f\,x)\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]}{a\,d^3}+\frac{3\,i\,f^3\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{a\,d^4}-\frac{3\,i\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{2\,a\,d^2}-\frac{3\,i\,f^3\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]}{a\,d^4}+\frac{3\,i\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]}{2\,a\,d^2}+\frac{3\,i\,f^3\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]}{2\,a\,d^4}+\frac{3\,i\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]}{a\,d^3}-\frac{3\,i\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]}{a\,d^3}-\frac{3\,i\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]}{a\,d^4}+\frac{3\,i\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]}{a\,d^4}+\frac{3\,f\,(e+f\,x)^2\,\text{Sech}[c+d\,x]}{2\,a\,d^2}+\frac{i\,(e+f\,x)^3\,\text{Sech}[c+d\,x]^2}{2\,a\,d}-\frac{3\,i\,f\,(e+f\,x)^2\,\text{Tanh}[c+d\,x]}{2\,a\,d^2}+\frac{(e+f\,x)^3\,\text{Sech}[c+d\,x]\,\text{Tanh}[c+d\,x]}{2\,a\,d}$$

Result (type 4, 1022 leaves):

$$-\frac{1}{8\,a\,d^4\,(-i+e^c)}\Big(-4\,i\,d^4\,e^3\,e^c\,x+48\,i\,d^2\,e\,e^c\,f^2\,x-6\,i\,d^4\,e^2\,e^c\,f\,x^2+24\,i\,d^2\,e^c\,f^3\,x^2-4\,i\,d^4\,e\,e^c\,f^2\,x^3-i\,d^4\,e^c\,f^3\,x^4+4\,i\,d^3\,e^3\,\text{ArcTan}\left[e^{c+d\,x}\right]-4\,d^3\,e^3\,e^c\,\text{ArcTan}\left[e^{c+d\,x}\right]-48\,i\,d\,e\,f^2\,\text{ArcTan}\left[e^{c+d\,x}\right]+48\,d\,e\,e^c\,f^2\,\text{ArcTan}\left[e^{c+d\,x}\right]+12\,d^3\,e^2\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+12\,i\,d^3\,e^2\,e^c\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-48\,d\,f^3\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-48\,i\,d\,e^c\,f^3\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+12\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+12\,i\,d^3\,e\,e^c\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+4\,d^3\,f^3\,x^3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+4\,i\,d^3\,e^c\,f^3\,x^3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+2\,d^3\,e^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+2\,i\,d^3\,e^3\,e^c\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-24\,d\,e\,f^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-24\,i\,d\,e\,e^c\,f^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,(1+i\,e^c)\,f\,\left(-4\,f^2+d^2\,(e+f\,x)^2\right)\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]-24\,i\,d\,(-i+e^c)\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+24\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]+24\,i\,e^c\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]\Big)+\frac{1}{8\,a\,d^4\,(i+e^c)}\Big(-i\,d^3\,\left(d\,e^c\,x\,\left(4\,e^3+6\,e^2\,f\,x+4\,e\,f^2\,x^2+f^3\,x^3\right)-4\,(i+e^c)\,(e+f\,x)^3\,\text{Log}\left[1-i\,e^{c+d\,x}\right]\right)+12\,i\,d^2\,(i+e^c)\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]+24\,d\,(1-i\,e^c)\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]+24\,i\,(i+e^c)\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]\Big)+\frac{x\,\left(4\,e^3+6\,e^2\,f\,x+4\,e\,f^2\,x^2+f^3\,x^3\right)}{8\,a\,\left(\text{Cosh}\left[\frac{c}{2}\right]-i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\,\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)}+\frac{i\,(e+f\,x)^3}{2\,a\,d\,\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2}-\frac{3\,i\,\left(e^2\,f\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,e\,f^2\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)}{a\,d^2\,\left(\text{Cosh}\left[\frac{c}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}\right]\right)\,\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}$$

Problem 272: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Sech}[c+d x]}{a+i a \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 268 leaves, 13 steps):

$$\frac{(e+f x)^2 \operatorname{ArcTan}\left[e^{c+d x}\right]}{a d}-\frac{f^2 \operatorname{ArcTan}[\operatorname{Sinh}[c+d x]]}{a d^3}+\frac{i f^2 \operatorname{Log}[\operatorname{Cosh}[c+d x]]}{a d^3}-\frac{i f (e+f x) \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{a d^2}+\frac{i f (e+f x) \operatorname{PolyLog}\left[2, i e^{c+d x}\right]}{a d^2}+\frac{i f^2 \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{a d^3}-\frac{i f^2 \operatorname{PolyLog}\left[3, i e^{c+d x}\right]}{a d^3}+\frac{f (e+f x) \operatorname{Sech}[c+d x]}{a d^2}+\frac{i (e+f x)^2 \operatorname{Sech}[c+d x]^2}{2 a d}-\frac{i f (e+f x) \operatorname{Tanh}[c+d x]}{a d^2}+\frac{(e+f x)^2 \operatorname{Sech}[c+d x] \operatorname{Tanh}[c+d x]}{2 a d}$$

Result (type 4, 623 leaves):

$$-\frac{1}{12 a}\left(\frac{6 e^2 e^c x}{1+i e^c}+\frac{24 i e^c f^2 x}{d^2\left(-i+e^c\right)}-6 i e f x^2+\frac{6 e f x^2}{-i+e^c}-2 i f^2 x^3+\frac{2 f^2 x^3}{-i+e^c}-\frac{6 e^2 \operatorname{ArcTan}\left[e^{c+d x}\right]}{d}+\frac{24 f^2 \operatorname{ArcTan}\left[e^{c+d x}\right]}{d^3}+\frac{12 i e f x \operatorname{Log}\left[1+i e^{c+d x}\right]}{d}+\frac{6 i f^2 x^2 \operatorname{Log}\left[1+i e^{c+d x}\right]}{d}+\frac{3 i e^2 \operatorname{Log}\left[1+e^{2(c+d x)}\right]}{d}-\frac{12 i f^2 \operatorname{Log}\left[1+e^{2(c+d x)}\right]}{d^3}+\frac{12 i f (e+f x) \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{d^2}-\frac{12 i f^2 \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{d^3}\right)-\frac{1}{6 a d^3\left(i+e^c\right)}\left(d^2\left(i d e^c x\left(3 e^2+3 e f x+f^2 x^2\right)+3\left(1-i e^c\right)(e+f x)^2 \operatorname{Log}\left[1-i e^{c+d x}\right]\right)+6 d\left(1-i e^c\right) f(e+f x) \operatorname{PolyLog}\left[2, i e^{c+d x}\right]+6 i\left(i+e^c\right) f^2 \operatorname{PolyLog}\left[3, i e^{c+d x}\right]\right)+\frac{x\left(3 e^2+3 e f x+f^2 x^2\right)}{6 a\left(\operatorname{Cosh}\left[\frac{c}{2}\right]-i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{c}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)}+\frac{i(e+f x)^2}{2 a d\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2}-\frac{2 i\left(e f \operatorname{Sinh}\left[\frac{d x}{2}\right]+f^2 x \operatorname{Sinh}\left[\frac{d x}{2}\right]\right)}{a d^2\left(\operatorname{Cosh}\left[\frac{c}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

Problem 273: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \operatorname{Sech}[c+d x]}{a+i a \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 161 leaves, 10 steps):

$$\frac{(e+f x)\,\text{ArcTan}\left[e^{c+d x}\right]}{a d}-\frac{i f\,\text{PolyLog}\left[2,-i e^{c+d x}\right]}{2 a d^2}+\frac{i f\,\text{PolyLog}\left[2,i e^{c+d x}\right]}{2 a d^2}+\frac{f\,\text{Sech}[c+d x]}{2 a d^2}+\frac{i (e+f x)\,\text{Sech}[c+d x]^2}{2 a d}-\frac{i f\,\text{Tanh}[c+d x]}{2 a d^2}+\frac{(e+f x)\,\text{Sech}[c+d x]\,\text{Tanh}[c+d x]}{2 a d}$$

Result (type 4, 731 leaves):

$$\frac{1}{16 d^2 (a+i a\,\text{Sinh}[c+d x])}\Bigg(\left(8 i d (e+f x)-4 (c+d x) (c f-d (2 e+f x))\right)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2-$$
$$4 d e\left(c+d x-2 i\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]-i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2+$$
$$4 c f\left(c+d x-2 i\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]-i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2-$$
$$4 d e\left(c+d x+2 i\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2+$$
$$4 c f\left(c+d x+2 i\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2-$$
$$(1-i) f\Bigg(2 c^2+(3+3 i) c \pi+4 c d x+(3+3 i) d \pi x+2 d^2 x^2+(2+2 i)(-2 i c+\pi-2 i d x)\,\text{Log}\left[1+i e^{-c-d x}\right]-(4+4 i)\pi\,\text{Log}\left[1+e^{c+d x}\right]+$$
$$4(-1)^{1/4}\sqrt{2}\,\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]\right]-2(-1)^{1/4}\sqrt{2}\,\pi\,\text{Log}\left[-\text{Sin}\left[\frac{1}{4}(\pi-2 i (c+d x))\right]\right]-$$
$$(4-4 i)\,\text{PolyLog}\left[2,-i e^{-c-d x}\right]\Bigg)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2+$$
$$\sqrt{2} f\Bigg(-2(-1)^{1/4}(c+d x)^2+\sqrt{2}\Bigg(-2 (2 i c+\pi+2 i d x)\,\text{Log}\left[1-i e^{-c-d x}\right]+\pi\Bigg(c+d x-$$
$$4\,\text{Log}\left[1+e^{c+d x}\right]+4\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}(c+d x)\right]\right]+2\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}(\pi+2 i (c+d x))\right]\right]\Bigg)+$$
$$4 i\,\text{PolyLog}\left[2,i e^{-c-d x}\right]\Bigg)\Bigg)\left(\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+i\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2+$$
$$16 f\,\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\left(-i\,\text{Cosh}\left[\frac{1}{2}(c+d x)\right]+\text{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)\Bigg)$$

Problem 276: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d x]}{(e+f x)^2 (a+i a \text{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 32 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d x]}{(e+f x)^2 (a+i a \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 277: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \text{Sech}[c+d x]^2}{a+i a \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 450 leaves, 20 steps):

$$\frac{2 (e+f x)^3}{3 a d} - \frac{i f (e+f x)^2 \text{ArcTan}\left[e^{c+d x}\right]}{a d^2} + \frac{i f^3 \text{ArcTan}[\text{Sinh}[c+d x]]}{a d^4} - \frac{2 f (e+f x)^2 \text{Log}\left[1+e^{2 (c+d x)}\right]}{a d^2} + \frac{f^3 \text{Log}[\text{Cosh}[c+d x]]}{a d^4} - \frac{f^2 (e+f x) \text{PolyLog}\left[2, -i e^{c+d x}\right]}{a d^3} + \frac{f^2 (e+f x) \text{PolyLog}\left[2, i e^{c+d x}\right]}{a d^3} - \frac{2 f^2 (e+f x) \text{PolyLog}\left[2, -e^{2 (c+d x)}\right]}{a d^3} + \frac{f^3 \text{PolyLog}\left[3, -i e^{c+d x}\right]}{a d^4} - \frac{f^3 \text{PolyLog}\left[3, i e^{c+d x}\right]}{a d^4} + \frac{f^3 \text{PolyLog}\left[3, -e^{2 (c+d x)}\right]}{a d^4} - \frac{i f^2 (e+f x) \text{Sech}[c+d x]}{a d^3} + \frac{f (e+f x)^2 \text{Sech}[c+d x]^2}{2 a d^2} + \frac{i (e+f x)^3 \text{Sech}[c+d x]^3}{3 a d} - \frac{f^2 (e+f x) \text{Tanh}[c+d x]}{a d^3} + \frac{2 (e+f x)^3 \text{Tanh}[c+d x]}{3 a d} - \frac{i f (e+f x)^2 \text{Sech}[c+d x] \text{Tanh}[c+d x]}{2 a d^2} + \frac{(e+f x)^3 \text{Sech}[c+d x]^2 \text{Tanh}[c+d x]}{3 a d}$$

Result (type 4, 1162 leaves):

$$\frac{1}{2\,a\,d^3\left(-\mathrm{i}+\mathrm{e}^c\right)}\mathrm{i}\,\mathrm{e}^c\,f\left(-\mathrm{i}\left(5\,d^2\,e^2-4\,f^2\right)x+\mathrm{e}^{-c}\left(1+\mathrm{i}\,\mathrm{e}^c\right)\left(5\,d^2\,e^2-4\,f^2\right)x+5\,d^2\,e\,\mathrm{e}^{-c}\,f\,x^2+\frac{5}{3}\,d^2\,\mathrm{e}^{-c}\,f^2\,x^3-\frac{5}{2}\,\mathrm{i}\,d\,e^2\,\mathrm{e}^{-c}\left(-\mathrm{i}+\mathrm{e}^c\right)\left(2\,d\,x-2\,\mathrm{i}\,\text{ArcTan}\left[\mathrm{e}^{c+d\,x}\right]-\text{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]\right)+\frac{1}{d}2\,\mathrm{e}^{-c}\left(-\mathrm{i}+\mathrm{e}^c\right)f^2\left(2\,\mathrm{i}\,d\,x+2\,\text{ArcTan}\left[\mathrm{e}^{c+d\,x}\right]-\mathrm{i}\,\text{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]\right)-5\,\mathrm{i}\,e\,\mathrm{e}^{-c}\left(-\mathrm{i}+\mathrm{e}^c\right)f\left(d\,x\left(d\,x-2\,\text{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]\right)-2\,\text{PolyLog}\left[2,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]\right)-\frac{1}{3\,d}5\,\mathrm{i}\,\mathrm{e}^{-c}\left(-\mathrm{i}+\mathrm{e}^c\right)f^2\left(d^2\,x^2\left(d\,x-3\,\text{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]\right)-6\,d\,x\,\text{PolyLog}\left[2,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+6\,\text{PolyLog}\left[3,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]\right)\right)-$$

$$\frac{1}{2\,a\,d^4\left(\mathrm{i}+\mathrm{e}^c\right)}\mathrm{i}\,f\left(d^2\left(\mathrm{i}\,d\,\mathrm{e}^c\,x\left(3\,e^2+3\,e\,f\,x+f^2\,x^2\right)+3\left(1-\mathrm{i}\,\mathrm{e}^c\right)\left(e+f\,x\right)^2\text{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]\right)+6\,d\left(1-\mathrm{i}\,\mathrm{e}^c\right)f\left(e+f\,x\right)\text{PolyLog}\left[2,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+6\,\mathrm{i}\left(\mathrm{i}+\mathrm{e}^c\right)f^2\,\text{PolyLog}\left[3,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]\right)+$$

$$\frac{e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]}{2\,a\,d\left(\text{Cosh}\left[\frac{c}{2}\right]-\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)}+$$

$$\frac{e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]}{3\,a\,d\left(\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^3}+$$

$$\left(\mathrm{i}\,d\,e^3\,\text{Cosh}\left[\frac{c}{2}\right]+3\,e^2\,f\,\text{Cosh}\left[\frac{c}{2}\right]+3\,\mathrm{i}\,d\,e^2\,f\,x\,\text{Cosh}\left[\frac{c}{2}\right]+6\,e\,f^2\,x\,\text{Cosh}\left[\frac{c}{2}\right]+3\,\mathrm{i}\,d\,e\,f^2\,x^2\,\text{Cosh}\left[\frac{c}{2}\right]+3\,f^3\,x^2\,\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,d\,f^3\,x^3\,\text{Cosh}\left[\frac{c}{2}\right]+d\,e^3\,\text{Sinh}\left[\frac{c}{2}\right]+3\,\mathrm{i}\,e^2\,f\,\text{Sinh}\left[\frac{c}{2}\right]+3\,d\,e^2\,f\,x\,\text{Sinh}\left[\frac{c}{2}\right]+6\,\mathrm{i}\,e\,f^2\,x\,\text{Sinh}\left[\frac{c}{2}\right]+3\,d\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{c}{2}\right]+3\,\mathrm{i}\,f^3\,x^2\,\text{Sinh}\left[\frac{c}{2}\right]+d\,f^3\,x^3\,\text{Sinh}\left[\frac{c}{2}\right]\right)\Big/\left(6\,a\,d^2\left(\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2\right)+$$

$$\left(5\,d^2\,e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]-12\,e\,f^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+15\,d^2\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-12\,f^3\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+15\,d^2\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+5\,d^2\,f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)\Big/\left(6\,a\,d^3\left(\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)\right)$$

Problem 280: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Sech}[c+d\,x]^2}{a+\mathrm{i}\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 3, 47 leaves, 3 steps):

$$\frac{\mathrm{i}\,\text{Sech}[c+d\,x]}{3\,d\left(a+\mathrm{i}\,a\,\text{Sinh}[c+d\,x]\right)}+\frac{2\,\text{Tanh}[c+d\,x]}{3\,a\,d}$$

Result (type 3, 103 leaves):

$$\left(-2\,i\,\text{Cosh}[c+d\,x]+4\,i\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]+8\,\text{Sinh}[c+d\,x]+\text{Sinh}\left[2\,\left(c+d\,x\right)\right]\right)\Big/\left(12\,a\,d\,\left(\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]-i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)\,\left(\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right)^3\right)$$

Problem 281: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d\,x]^2}{\left(e+f\,x\right)\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d\,x]^2}{\left(e+f\,x\right)\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 282: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d\,x]^2}{\left(e+f\,x\right)^2\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d\,x]^2}{\left(e+f\,x\right)^2\,\left(a+i\,a\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 283: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(e+f\,x\right)^3\,\text{Sech}[c+d\,x]^3}{a+i\,a\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 667 leaves, 32 steps):

$$-\frac{i f (e+f x)^2}{2 a d^2}-\frac{5 f^2 (e+f x) \text{ArcTan}\left[e^{c+d x}\right]}{a d^3}+\frac{3 (e+f x)^3 \text{ArcTan}\left[e^{c+d x}\right]}{4 a d}+\frac{i f^2 (e+f x) \text{Log}\left[1+e^{2 (c+d x)}\right]}{a d^3}+\frac{5 i f^3 \text{PolyLog}\left[2,-i e^{c+d x}\right]}{2 a d^4}-\frac{9 i f (e+f x)^2 \text{PolyLog}\left[2,-i e^{c+d x}\right]}{8 a d^2}-\frac{5 i f^3 \text{PolyLog}\left[2,i e^{c+d x}\right]}{2 a d^4}+\frac{9 i f (e+f x)^2 \text{PolyLog}\left[2,i e^{c+d x}\right]}{8 a d^2}+\frac{i f^3 \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{2 a d^4}+\frac{9 i f^2 (e+f x) \text{PolyLog}\left[3,-i e^{c+d x}\right]}{4 a d^3}-\frac{9 i f^2 (e+f x) \text{PolyLog}\left[3,i e^{c+d x}\right]}{4 a d^3}-\frac{9 i f^3 \text{PolyLog}\left[4,-i e^{c+d x}\right]}{4 a d^4}+\frac{9 i f^3 \text{PolyLog}\left[4,i e^{c+d x}\right]}{4 a d^4}-\frac{f^3 \text{Sech}[c+d x]}{4 a d^4}+\frac{9 f (e+f x)^2 \text{Sech}[c+d x]}{8 a d^2}-\frac{i f^2 (e+f x) \text{Sech}[c+d x]^2}{4 a d^3}+\frac{f (e+f x)^2 \text{Sech}[c+d x]^3}{4 a d^2}+\frac{i (e+f x)^3 \text{Sech}[c+d x]^4}{4 a d}+\frac{i f^3 \text{Tanh}[c+d x]}{4 a d^4}-\frac{i f (e+f x)^2 \text{Tanh}[c+d x]}{2 a d^2}-\frac{f^2 (e+f x) \text{Sech}[c+d x] \text{Tanh}[c+d x]}{4 a d^3}+\frac{3 (e+f x)^3 \text{Sech}[c+d x] \text{Tanh}[c+d x]}{8 a d}-\frac{i f (e+f x)^2 \text{Sech}[c+d x]^2 \text{Tanh}[c+d x]}{4 a d^2}+\frac{(e+f x)^3 \text{Sech}[c+d x]^3 \text{Tanh}[c+d x]}{4 a d}$$

Result (type 4, 2208 leaves):

$$-\frac{1}{32 a d^4 \left(-i+e^c\right)}\Big(-12 i d^4 e^3 e^c x+112 i d^2 e e^c f^2 x-18 i d^4 e^2 e^c f x^2+56 i d^2 e^c f^3 x^2-12 i d^4 e e^c f^2 x^3-3 i d^4 e^c f^3 x^4+12 i d^3 e^3 \text{ArcTan}\left[e^{c+d x}\right]-12 d^3 e^3 e^c \text{ArcTan}\left[e^{c+d x}\right]-112 i d e f^2 \text{ArcTan}\left[e^{c+d x}\right]+112 d e e^c f^2 \text{ArcTan}\left[e^{c+d x}\right]+36 d^3 e^2 f x \text{Log}\left[1+i e^{c+d x}\right]+36 i d^3 e^2 e^c f x \text{Log}\left[1+i e^{c+d x}\right]-112 d f^3 x \text{Log}\left[1+i e^{c+d x}\right]-112 i d e^c f^3 x \text{Log}\left[1+i e^{c+d x}\right]+36 d^3 e f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]+36 i d^3 e e^c f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]+12 d^3 f^3 x^3 \text{Log}\left[1+i e^{c+d x}\right]+12 i d^3 e^c f^3 x^3 \text{Log}\left[1+i e^{c+d x}\right]+6 d^3 e^3 \text{Log}\left[1+e^{2 (c+d x)}\right]+6 i d^3 e^3 e^c \text{Log}\left[1+e^{2 (c+d x)}\right]-56 d e f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]-56 i d e e^c f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+4 \left(1+i e^c\right) f \left(-28 f^2+9 d^2 (e+f x)^2\right) \text{PolyLog}\left[2,-i e^{c+d x}\right]-72 i d \left(-i+e^c\right) f^2 (e+f x) \text{PolyLog}\left[3,-i e^{c+d x}\right]+72 f^3 \text{PolyLog}\left[4,-i e^{c+d x}\right]+72 i e^c f^3 \text{PolyLog}\left[4,-i e^{c+d x}\right]\Big)-$$

$$\frac{1}{32 a d^4 \left(i+e^c\right)}3 \Big(4 i d^4 e^3 e^c x-16 i d^2 e e^c f^2 x+6 i d^4 e^2 e^c f x^2-8 i d^2 e^c f^3 x^2+4 i d^4 e e^c f^2 x^3+i d^4 e^c f^3 x^4-4 i d^3 e^3 \text{ArcTan}\left[e^{c+d x}\right]-4 d^3 e^3 e^c \text{ArcTan}\left[e^{c+d x}\right]+16 i d e f^2 \text{ArcTan}\left[e^{c+d x}\right]+16 d e e^c f^2 \text{ArcTan}\left[e^{c+d x}\right]+12 d^3 e^2 f x \text{Log}\left[1-i e^{c+d x}\right]-12 i d^3 e^2 e^c f x \text{Log}\left[1-i e^{c+d x}\right]-16 d f^3 x \text{Log}\left[1-i e^{c+d x}\right]+16 i d e^c f^3 x \text{Log}\left[1-i e^{c+d x}\right]+12 d^3 e f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]-12 i d^3 e e^c f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]+4 d^3 f^3 x^3 \text{Log}\left[1-i e^{c+d x}\right]-4 i d^3 e^c f^3 x^3 \text{Log}\left[1-i e^{c+d x}\right]+2 d^3 e^3 \text{Log}\left[1+e^{2 (c+d x)}\right]-2 i d^3 e^3 e^c \text{Log}\left[1+e^{2 (c+d x)}\right]-8 d e f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+8 i d e e^c f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+4 \left(1-i e^c\right) f \left(-4 f^2+3 d^2 (e+f x)^2\right) \text{PolyLog}\left[2,i e^{c+d x}\right]+24 i d \left(i+e^c\right) f^2 (e+f x) \text{PolyLog}\left[3,i e^{c+d x}\right]+$$

$$24 f^3 \text{PolyLog}\left[4, i e^{c+d x}\right] - 24 i e^c f^3 \text{PolyLog}\left[4, i e^{c+d x}\right]\Big) +$$

$$\frac{\frac{3 e^3 x \text{Cosh}[c]}{4 a} + \frac{3 e^3 x \text{Sinh}[c]}{4 a}}{1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]} + \frac{\frac{9 e^2 f x^2 \text{Cosh}[c]}{8 a} + \frac{9 e^2 f x^2 \text{Sinh}[c]}{8 a}}{1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]} +$$

$$\frac{\frac{3 e f^2 x^3 \text{Cosh}[c]}{4 a} + \frac{3 e f^2 x^3 \text{Sinh}[c]}{4 a}}{1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]} +$$

$$\frac{\frac{3 f^3 x^4 \text{Cosh}[c]}{16 a} + \frac{3 f^3 x^4 \text{Sinh}[c]}{16 a}}{1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]} -$$

$$\frac{i \left(e^3 + 3 e^2 f x + 3 e f^2 x^2 + f^3 x^3\right)}{8 a d \left(\text{Cosh}\left[\frac{c}{2} + \frac{d x}{2}\right] - i \text{Sinh}\left[\frac{c}{2} + \frac{d x}{2}\right]\right)^2} +$$

$$\frac{3 i \left(e^2 f \text{Sinh}\left[\frac{d x}{2}\right] + 2 e f^2 x \text{Sinh}\left[\frac{d x}{2}\right] + f^3 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)}{4 a d^2 \left(\text{Cosh}\left[\frac{c}{2}\right] - i \text{Sinh}\left[\frac{c}{2}\right]\right) \left(\text{Cosh}\left[\frac{c}{2} + \frac{d x}{2}\right] - i \text{Sinh}\left[\frac{c}{2} + \frac{d x}{2}\right]\right)} +$$

$$\frac{i \left(e^3 + 3 e^2 f x + 3 e f^2 x^2 + f^3 x^3\right)}{8 a d \left(\text{Cosh}\left[\frac{c}{2} + \frac{d x}{2}\right] + i \text{Sinh}\left[\frac{c}{2} + \frac{d x}{2}\right]\right)^4} -$$

$$\frac{i \left(e^2 f \text{Sinh}\left[\frac{d x}{2}\right] + 2 e f^2 x \text{Sinh}\left[\frac{d x}{2}\right] + f^3 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)}{4 a d^2 \left(\text{Cosh}\left[\frac{c}{2}\right] + i \text{Sinh}\left[\frac{c}{2}\right]\right) \left(\text{Cosh}\left[\frac{c}{2} + \frac{d x}{2}\right] + i \text{Sinh}\left[\frac{c}{2} + \frac{d x}{2}\right]\right)^3} +$$

$$\frac{1}{8 a d^3 \left(\text{Cosh}\left[\frac{c}{2}\right] + i \text{Sinh}\left[\frac{c}{2}\right]\right) \left(\text{Cosh}\left[\frac{c}{2} + \frac{d x}{2}\right] + i \text{Sinh}\left[\frac{c}{2} + \frac{d x}{2}\right]\right)^2}$$

$$\Big(2 i d^2 e^3 \text{Cosh}\left[\frac{c}{2}\right] + d e^2 f \text{Cosh}\left[\frac{c}{2}\right] - 2 i e f^2 \text{Cosh}\left[\frac{c}{2}\right] + 6 i d^2 e^2 f x \text{Cosh}\left[\frac{c}{2}\right] + 2 d e f^2 x \text{Cosh}\left[\frac{c}{2}\right] -$$

$$2 i f^3 x \text{Cosh}\left[\frac{c}{2}\right] + 6 i d^2 e f^2 x^2 \text{Cosh}\left[\frac{c}{2}\right] + d f^3 x^2 \text{Cosh}\left[\frac{c}{2}\right] + 2 i d^2 f^3 x^3 \text{Cosh}\left[\frac{c}{2}\right] -$$

$$2 d^2 e^3 \text{Sinh}\left[\frac{c}{2}\right] - i d e^2 f \text{Sinh}\left[\frac{c}{2}\right] + 2 e f^2 \text{Sinh}\left[\frac{c}{2}\right] - 6 d^2 e^2 f x \text{Sinh}\left[\frac{c}{2}\right] - 2 i d e f^2 x \text{Sinh}\left[\frac{c}{2}\right] +$$

$$2 f^3 x \text{Sinh}\left[\frac{c}{2}\right] - 6 d^2 e f^2 x^2 \text{Sinh}\left[\frac{c}{2}\right] - i d f^3 x^2 \text{Sinh}\left[\frac{c}{2}\right] - 2 d^2 f^3 x^3 \text{Sinh}\left[\frac{c}{2}\right]\Big) -$$

$$\left(i \left(7 d^2 e^2 f \text{Sinh}\left[\frac{d x}{2}\right] - 2 f^3 \text{Sinh}\left[\frac{d x}{2}\right] + 14 d^2 e f^2 x \text{Sinh}\left[\frac{d x}{2}\right] + 7 d^2 f^3 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)\right) \Big/$$

$$\left(4 a d^4 \left(\text{Cosh}\left[\frac{c}{2}\right] + i \text{Sinh}\left[\frac{c}{2}\right]\right) \left(\text{Cosh}\left[\frac{c}{2} + \frac{d x}{2}\right] + i \text{Sinh}\left[\frac{c}{2} + \frac{d x}{2}\right]\right)\right)$$

Problem 284: Result more than twice size of optimal antiderivative.

$$\int \frac{(e + f x)^2 \text{Sech}[c + d x]^3}{a + i a \text{Sinh}[c + d x]} \, dx$$

Optimal (type 4, 423 leaves, 17 steps):

$$\frac{3\,(e+f\,x)^2\,\text{ArcTan}\left[e^{c+d\,x}\right]}{4\,a\,d}-\frac{5\,f^2\,\text{ArcTan}[\text{Sinh}[c+d\,x]]}{6\,a\,d^3}+\frac{i\,f^2\,\text{Log}[\text{Cosh}[c+d\,x]]}{3\,a\,d^3}-\frac{3\,i\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{4\,a\,d^2}+\frac{3\,i\,f\,(e+f\,x)\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]}{4\,a\,d^2}+\frac{3\,i\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]}{4\,a\,d^3}-\frac{3\,i\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]}{4\,a\,d^3}+\frac{3\,f\,(e+f\,x)\,\text{Sech}[c+d\,x]}{4\,a\,d^2}-\frac{i\,f^2\,\text{Sech}[c+d\,x]^2}{12\,a\,d^3}+\frac{f\,(e+f\,x)\,\text{Sech}[c+d\,x]^3}{6\,a\,d^2}+\frac{i\,(e+f\,x)^2\,\text{Sech}[c+d\,x]^4}{4\,a\,d}-\frac{i\,f\,(e+f\,x)\,\text{Tanh}[c+d\,x]}{3\,a\,d^2}-\frac{f^2\,\text{Sech}[c+d\,x]\,\text{Tanh}[c+d\,x]}{12\,a\,d^3}+\frac{3\,(e+f\,x)^2\,\text{Sech}[c+d\,x]\,\text{Tanh}[c+d\,x]}{8\,a\,d}-\frac{i\,f\,(e+f\,x)\,\text{Sech}[c+d\,x]^2\,\text{Tanh}[c+d\,x]}{6\,a\,d^2}+\frac{(e+f\,x)^2\,\text{Sech}[c+d\,x]^3\,\text{Tanh}[c+d\,x]}{4\,a\,d}$$

Result (type 4, 1437 leaves):

$$-\frac{1}{24\,a\,d^2\,(-i+e^c)}e^c\left(-i\,(9\,d^2\,e^2-28\,f^2)\,x+e^{-c}\,(1+i\,e^c)\,(9\,d^2\,e^2-28\,f^2)\,x+9\,d^2\,e\,e^{-c}\,f\,x^2+3\,d^2\,e^{-c}\,f^2\,x^3-\frac{9}{2}\,i\,d\,e^2\,e^{-c}\,(-i+e^c)\,\left(2\,d\,x-2\,i\,\text{ArcTan}\left[e^{c+d\,x}\right]-\text{Log}\left[1+e^{2\,(c+d\,x)}\right]\right)+\frac{1}{d}14\,e^{-c}\,(-i+e^c)\,f^2\,\left(2\,i\,d\,x+2\,\text{ArcTan}\left[e^{c+d\,x}\right]-i\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]\right)-9\,i\,e\,e^{-c}\,(-i+e^c)\,f\,\left(d\,x\,\left(d\,x-2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\right)-2\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]\right)-\frac{1}{d}3\,i\,e^{-c}\,(-i+e^c)\,f^2\,\left(d^2\,x^2\,\left(d\,x-3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\right)-6\,d\,x\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]+6\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]\right)\right)-\frac{1}{8\,a\,d^2\,(i+e^c)}e^c\left(i\,(3\,d^2\,e^2-4\,f^2)\,x+e^{-c}\,(1-i\,e^c)\,(3\,d^2\,e^2-4\,f^2)\,x+3\,d^2\,e\,e^{-c}\,f\,x^2+d^2\,e^{-c}\,f^2\,x^3+\frac{3}{2}\,i\,d\,e^2\,e^{-c}\,(i+e^c)\,\left(2\,d\,x+2\,i\,\text{ArcTan}\left[e^{c+d\,x}\right]-\text{Log}\left[1+e^{2\,(c+d\,x)}\right]\right)+\frac{1}{d}2\,e^{-c}\,(i+e^c)\,f^2\,\left(-2\,i\,d\,x+2\,\text{ArcTan}\left[e^{c+d\,x}\right]+i\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]\right)+3\,i\,e\,e^{-c}\,(i+e^c)\,f\,\left(d\,x\,\left(d\,x-2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]\right)-2\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]\right)+\frac{1}{d}i\,e^{-c}\,(i+e^c)\,f^2\,\left(d^2\,x^2\,\left(d\,x-3\,\text{Log}\left[1-i\,e^{c+d\,x}\right]\right)-6\,d\,x\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]+6\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]\right)\right)+\frac{\frac{3\,e^2\,x\,\text{Cosh}[c]}{4\,a}+\frac{3\,e^2\,x\,\text{Sinh}[c]}{4\,a}}{1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]}+\frac{\frac{3\,e\,f\,x^2\,\text{Cosh}[c]}{4\,a}+\frac{3\,e\,f\,x^2\,\text{Sinh}[c]}{4\,a}}{1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]}+\frac{\frac{f^2\,x^3\,\text{Cosh}[c]}{4\,a}+\frac{f^2\,x^3\,\text{Sinh}[c]}{4\,a}}{1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]}-\frac{i\,(e^2+2\,e\,f\,x+f^2\,x^2)}{8\,a\,d\,\left(\text{Cosh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]-i\,\text{Sinh}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2}+$$

$$\frac{i\left(e f \operatorname{Sinh}\left[\frac{d x}{2}\right]+f^2 x \operatorname{Sinh}\left[\frac{d x}{2}\right]\right)}{2 a d^2\left(\operatorname{Cosh}\left[\frac{c}{2}\right]-i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]-i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}+$$

$$\frac{i\left(e^2+2 e f x+f^2 x^2\right)}{8 a d\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^4}-$$

$$\frac{i\left(e f \operatorname{Sinh}\left[\frac{d x}{2}\right]+f^2 x \operatorname{Sinh}\left[\frac{d x}{2}\right]\right)}{6 a d^2\left(\operatorname{Cosh}\left[\frac{c}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$

$$\left(3 i d^2 e^2 \operatorname{Cosh}\left[\frac{c}{2}\right]+d e f \operatorname{Cosh}\left[\frac{c}{2}\right]-i f^2 \operatorname{Cosh}\left[\frac{c}{2}\right]+6 i d^2 e f x \operatorname{Cosh}\left[\frac{c}{2}\right]+\right.$$
$$d f^2 x \operatorname{Cosh}\left[\frac{c}{2}\right]+3 i d^2 f^2 x^2 \operatorname{Cosh}\left[\frac{c}{2}\right]-3 d^2 e^2 \operatorname{Sinh}\left[\frac{c}{2}\right]-i d e f \operatorname{Sinh}\left[\frac{c}{2}\right]+$$
$$\left.f^2 \operatorname{Sinh}\left[\frac{c}{2}\right]-6 d^2 e f x \operatorname{Sinh}\left[\frac{c}{2}\right]-i d f^2 x \operatorname{Sinh}\left[\frac{c}{2}\right]-3 d^2 f^2 x^2 \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\Big/$$
$$\left(12 a d^3\left(\operatorname{Cosh}\left[\frac{c}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)-$$

$$\frac{7 i\left(e f \operatorname{Sinh}\left[\frac{d x}{2}\right]+f^2 x \operatorname{Sinh}\left[\frac{d x}{2}\right]\right)}{6 a d^2\left(\operatorname{Cosh}\left[\frac{c}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cosh}\left[\frac{c}{2}+\frac{d x}{2}\right]+i \operatorname{Sinh}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

Problem 285: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \operatorname{Sech}[c+d x]^3}{a+i a \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 233 leaves, 11 steps):

$$\frac{3 (e+f x) \operatorname{ArcTan}\left[e^{c+d x}\right]}{4 a d}-\frac{3 i f \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{8 a d^2}+\frac{3 i f \operatorname{PolyLog}\left[2, i e^{c+d x}\right]}{8 a d^2}+$$
$$\frac{3 f \operatorname{Sech}[c+d x]}{8 a d^2}+\frac{f \operatorname{Sech}[c+d x]^3}{12 a d^2}+\frac{i (e+f x) \operatorname{Sech}[c+d x]^4}{4 a d}-\frac{i f \operatorname{Tanh}[c+d x]}{4 a d^2}+$$
$$\frac{3 (e+f x) \operatorname{Sech}[c+d x] \operatorname{Tanh}[c+d x]}{8 a d}+\frac{(e+f x) \operatorname{Sech}[c+d x]^3 \operatorname{Tanh}[c+d x]}{4 a d}+\frac{i f \operatorname{Tanh}[c+d x]^3}{12 a d^2}$$

Result (type 4, 1290 leaves):

$$\frac{i (6 d e-i f-6 c f+6 f (c+d x))}{24 d^2 (a+i a \operatorname{Sinh}[c+d x])}+$$

$$\frac{i (d e-c f+f (c+d x))}{8 d^2\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2 (a+i a \operatorname{Sinh}[c+d x])}+$$

$$\left(3 (c+d x) (2 d e-2 c f+f (c+d x))\left(\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)^2\right)\Big/$$
$$\left(16 d^2 (a+i a \operatorname{Sinh}[c+d x])\right)+$$
$$\left(3 i e\left(\frac{1}{2} i (c+d x)+\operatorname{Log}\left[\operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]-i \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right]\right)\right.$$

$$\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\Bigg)\Bigg/\left(8\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])\right)-$$

$$\left(3\,i\,c\,f\left(\frac{1}{2}\,i\,(c+d\,x)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]-i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\right.$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg/\left(8\,d^2\,(a+i\,a\,\text{Sinh}[c+d\,x])\right)-$$

$$\left(3\,i\,e\left(-\frac{1}{2}\,i\,(c+d\,x)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\right.$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg/\left(8\,d\,(a+i\,a\,\text{Sinh}[c+d\,x])\right)+$$

$$\left(3\,i\,c\,f\left(-\frac{1}{2}\,i\,(c+d\,x)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)\right.$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg/\left(8\,d^2\,(a+i\,a\,\text{Sinh}[c+d\,x])\right)+$$

$$\left(3\,f\left(-\frac{1}{4}\,e^{-\frac{i\pi}{4}}\,(c+d\,x)^2-\frac{1}{\sqrt{2}}\left(\frac{3}{4}\,\pi\,(c+d\,x)-\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-\right.\right.\right.$$
$$2\left(-\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)\text{Log}\left[1-e^{2\,i\,\left(-\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]+\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$
$$\left.\left.\frac{1}{2}\,\pi\,\text{Log}\left[-\text{Sin}\left[\frac{\pi}{4}-\frac{1}{2}\,i\,(c+d\,x)\right]\right]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,\left(-\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]\right)\right)$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg/\left(4\,\sqrt{2}\,d^2\,(a+i\,a\,\text{Sinh}[c+d\,x])\right)+$$

$$\left(3\,f\left(-\frac{1}{4}\,e^{\frac{i\pi}{4}}\,(c+d\,x)^2+\frac{1}{\sqrt{2}}\left(\frac{1}{4}\,\pi\,(c+d\,x)-\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-\right.\right.\right.$$
$$2\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)\text{Log}\left[1-e^{2\,i\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]+\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$\left.\left.\frac{1}{2}\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right]\right]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]\right)\right)$$
$$\left.\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\right)\Bigg/\left(4\,\sqrt{2}\,d^2\,(a+i\,a\,\text{Sinh}[c+d\,x])\right)-$$

$$\frac{i\,(d\,e-c\,f+f\,(c+d\,x))\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2}{8\,d^2\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]-i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2(a+i\,a\,\text{Sinh}[c+d\,x])}-$$

$$\left(i\,f\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\Bigg/$$
$$\left(12\,d^2\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)(a+i\,a\,\text{Sinh}[c+d\,x])\right)-$$

$$\frac{7\,i\,f\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]}{12\,d^2\,(a+i\,a\,\text{Sinh}[c+d\,x])}+$$

$$\frac{i\,f\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)^2\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]}{4\,d^2\left(\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]-i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)(a+i\,a\,\text{Sinh}[c+d\,x])}$$

Problem 287: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d x]^3}{(e+f x)\,(a+i a \,\text{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d x]^3}{(e+f x)\,(a+i a \,\text{Sinh}[c+d x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 288: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d x]^3}{(e+f x)^2\,(a+i a \,\text{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 34 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d x]^3}{(e+f x)^2\,(a+i a \,\text{Sinh}[c+d x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 289: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3\,\text{Cosh}[c+d x]}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 356 leaves, 11 steps):

$$-\frac{(e+f x)^4}{4 b f}+\frac{(e+f x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b d}+\frac{(e+f x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b d}+$$
$$\frac{3 f\,(e+f x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b d^2}+\frac{3 f\,(e+f x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b d^2}-$$
$$\frac{6 f^2\,(e+f x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b d^3}-\frac{6 f^2\,(e+f x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b d^3}+$$
$$\frac{6 f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b d^4}+\frac{6 f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b d^4}$$

Result (type 4, 778 leaves):

$$\frac{1}{4\,b\,d^4}\left(-4\,d^4\,e^3\,x-6\,d^4\,e^2\,f\,x^2-4\,d^4\,e\,f^2\,x^3-d^4\,f^3\,x^4+\right.$$
$$4\,d^3\,e^3\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+12\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+4\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$4\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d^2\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d^2\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$24\,d\,e\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-24\,d\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$24\,d\,e\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-24\,d\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$\left.24\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+24\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)$$

Problem 291: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{\left(e+f\,x\right)\,\text{Cosh}\left[c+d\,x\right]}{a+b\,\text{Sinh}\left[c+d\,x\right]}\,dx$$

Optimal (type 4, 170 leaves, 7 steps):

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

Result (type 4, 341 leaves):

$$\frac{1}{8\,b\,d^2}\left(-f\,\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-32\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{\left(a+\mathrm{i}\,b\right)\,\text{Cot}\left[\frac{1}{4}\,\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$4\,f\,\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$4\,f\,\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$4\,\mathrm{i}\,f\,\pi\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]+8\,d\,e\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+d\,x\right]}{a}\right]-8\,c\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+d\,x\right]}{a}\right]+$$

$$\left.8\,f\,\left(\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+\text{PolyLog}\left[2,\,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]\right)\right)$$

Problem 294: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(e+f\,x\right)^3\,\text{Cosh}\left[c+d\,x\right]^2}{a+b\,\text{Sinh}\left[c+d\,x\right]}\,dx$$

Optimal (type 4, 527 leaves, 18 steps):

$$-\frac{a\,(e+f\,x)^4}{4\,b^2\,f}+\frac{6\,f^2\,(e+f\,x)\,\mathrm{Cosh}[c+d\,x]}{b\,d^3}+$$
$$\frac{(e+f\,x)^3\,\mathrm{Cosh}[c+d\,x]}{b\,d}+\frac{\sqrt{a^2+b^2}\;(e+f\,x)^3\,\mathrm{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d}-$$
$$\frac{\sqrt{a^2+b^2}\;(e+f\,x)^3\,\mathrm{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d}+\frac{3\,\sqrt{a^2+b^2}\;f\,(e+f\,x)^2\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d^2}-$$
$$\frac{3\,\sqrt{a^2+b^2}\;f\,(e+f\,x)^2\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d^2}-\frac{6\,\sqrt{a^2+b^2}\;f^2\,(e+f\,x)\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d^3}+$$
$$\frac{6\,\sqrt{a^2+b^2}\;f^2\,(e+f\,x)\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d^3}+\frac{6\,\sqrt{a^2+b^2}\;f^3\,\mathrm{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d^4}-$$
$$\frac{6\,\sqrt{a^2+b^2}\;f^3\,\mathrm{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d^4}-\frac{6\,f^3\,\mathrm{Sinh}[c+d\,x]}{b\,d^4}-\frac{3\,f\,(e+f\,x)^2\,\mathrm{Sinh}[c+d\,x]}{b\,d^2}$$

Result (type 4, 1135 leaves) :

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

$$4\,b\,d\,(e+f\,x)\,\left(6\,f^2+d^2\,(e+f\,x)^2\right)\,\text{Cosh}[c+d\,x]+\frac{1}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}$$

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

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

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

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

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

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

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

$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\sqrt{-a^2-b^2}\,e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$\left.6\,\sqrt{-a^2-b^2}\,e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)-$$

$$\left.12\,b\,f\,\left(2\,f^2+d^2\,(e+f\,x)^2\right)\,\text{Sinh}[c+d\,x]\right)$$

Problem 299: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Cosh}[c+d x]^3}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 642 leaves, 21 steps):

$$\frac{3 f^3 x}{8 b d^3}+\frac{(e+f x)^3}{4 b d}-\frac{(a^2+b^2)(e+f x)^4}{4 b^3 f}+\frac{6 a f^3 \operatorname{Cosh}[c+d x]}{b^2 d^4}+\frac{3 a f (e+f x)^2 \operatorname{Cosh}[c+d x]}{b^2 d^2}+$$
$$\frac{(a^2+b^2)(e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d}+\frac{(a^2+b^2)(e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d}+$$
$$\frac{3 (a^2+b^2) f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^2}+\frac{3 (a^2+b^2) f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^2}-$$
$$\frac{6 (a^2+b^2) f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^3}-\frac{6 (a^2+b^2) f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^3}+$$
$$\frac{6 (a^2+b^2) f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^4}+\frac{6 (a^2+b^2) f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^4}-$$
$$\frac{6 a f^2 (e+f x) \operatorname{Sinh}[c+d x]}{b^2 d^3}-\frac{a (e+f x)^3 \operatorname{Sinh}[c+d x]}{b^2 d}-\frac{3 f^3 \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{8 b d^4}-$$
$$\frac{3 f (e+f x)^2 \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{4 b d^2}+\frac{3 f^2 (e+f x) \operatorname{Sinh}[c+d x]^2}{4 b d^3}+\frac{(e+f x)^3 \operatorname{Sinh}[c+d x]^2}{2 b d}$$

Result (type 4, 2558 leaves):

$$-\frac{1}{2 b^3 d^4 (-1+e^{2 c})}(a^2+b^2)\Bigg(4 d^4 e^3 e^{2 c} x+6 d^4 e^2 e^{2 c} f x^2+4 d^4 e e^{2 c} f^2 x^3+d^4 e^{2 c} f^3 x^4+$$
$$2 d^3 e^3 \operatorname{Log}\left[2 a e^{c+d x}+b\left(-1+e^{2(c+d x)}\right)\right]-2 d^3 e^3 e^{2 c} \operatorname{Log}\left[2 a e^{c+d x}+b\left(-1+e^{2(c+d x)}\right)\right]+$$
$$6 d^3 e^2 f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-6 d^3 e^2 e^{2 c} f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]+$$
$$6 d^3 e f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-6 d^3 e e^{2 c} f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]+$$
$$2 d^3 f^3 x^3 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-2 d^3 e^{2 c} f^3 x^3 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]+$$
$$6 d^3 e^2 f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]-6 d^3 e^2 e^{2 c} f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]+$$
$$6 d^3 e f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]-6 d^3 e e^{2 c} f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]+$$

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

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2$$

$$\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$12\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,f^3\,x$$

$$\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,f^3\,x$$

$$\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$\left.12\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)+$$

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

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

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

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

$$\left(\frac{a\,f^3\,x^3\,\text{Cosh}[c]}{2\,b^2\,d}-\frac{a\,f^3\,x^3\,\text{Sinh}[c]}{2\,b^2\,d}+\right.$$

$$\left(d^3\,e^3+3\,d^2\,e^2\,f+6\,d\,e\,f^2+6\,f^3\right)\,\left(\frac{a\,\text{Cosh}[c]}{2\,b^2\,d^4}-\frac{a\,\text{Sinh}[c]}{2\,b^2\,d^4}\right)+$$

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

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

$$\Bigg(-\frac{a\,f^3\,x^3\,\text{Cosh}[c]}{2\,b^2\,d}-\frac{a\,f^3\,x^3\,\text{Sinh}[c]}{2\,b^2\,d}+\left(d^3\,e^3-3\,d^2\,e^2\,f+6\,d\,e\,f^2-6\,f^3\right)\left(-\frac{a\,\text{Cosh}[c]}{2\,b^2\,d^4}-\frac{a\,\text{Sinh}[c]}{2\,b^2\,d^4}\right)-$$

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

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

$$\left.a\,d^2\,e^2\,f\,\text{Sinh}[c]-2\,a\,d\,e\,f^2\,\text{Sinh}[c]+2\,a\,f^3\,\text{Sinh}[c]\right)\Bigg)\left(\text{Cosh}[d\,x]+\text{Sinh}[d\,x]\right)+$$

$$\Bigg(\frac{f^3\,x^3\,\text{Cosh}[2\,c]}{8\,b\,d}-\frac{f^3\,x^3\,\text{Sinh}[2\,c]}{8\,b\,d}+\left(4\,d^3\,e^3+6\,d^2\,e^2\,f+6\,d\,e\,f^2+3\,f^3\right)\left(\frac{\text{Cosh}[2\,c]}{32\,b\,d^4}-\frac{\text{Sinh}[2\,c]}{32\,b\,d^4}\right)+$$

$$\left(2\,d^2\,e^2\,f+2\,d\,e\,f^2+f^3\right)\left(\frac{3\,x\,\text{Cosh}[2\,c]}{16\,b\,d^3}-\frac{3\,x\,\text{Sinh}[2\,c]}{16\,b\,d^3}\right)+$$

$$\left(2\,d\,e\,f^2+f^3\right)\left(\frac{3\,x^2\,\text{Cosh}[2\,c]}{16\,b\,d^2}-\frac{3\,x^2\,\text{Sinh}[2\,c]}{16\,b\,d^2}\right)\Bigg)\left(\text{Cosh}[2\,d\,x]-\text{Sinh}[2\,d\,x]\right)+$$

$$\Bigg(\frac{f^3\,x^3\,\text{Cosh}[2\,c]}{8\,b\,d}+\frac{f^3\,x^3\,\text{Sinh}[2\,c]}{8\,b\,d}+\left(4\,d^3\,e^3-6\,d^2\,e^2\,f+6\,d\,e\,f^2-3\,f^3\right)\left(\frac{\text{Cosh}[2\,c]}{32\,b\,d^4}+\frac{\text{Sinh}[2\,c]}{32\,b\,d^4}\right)+$$

$$\frac{1}{16\,b\,d^2}3\,x^2\left(2\,d\,e\,f^2\,\text{Cosh}[2\,c]-f^3\,\text{Cosh}[2\,c]+2\,d\,e\,f^2\,\text{Sinh}[2\,c]-f^3\,\text{Sinh}[2\,c]\right)+$$

$$\frac{1}{16\,b\,d^3}3\,x\left(2\,d^2\,e^2\,f\,\text{Cosh}[2\,c]-2\,d\,e\,f^2\,\text{Cosh}[2\,c]+f^3\,\text{Cosh}[2\,c]+\right.$$

$$\left.2\,d^2\,e^2\,f\,\text{Sinh}[2\,c]-2\,d\,e\,f^2\,\text{Sinh}[2\,c]+f^3\,\text{Sinh}[2\,c]\right)\Bigg)\left(\text{Cosh}[2\,d\,x]+\text{Sinh}[2\,d\,x]\right)$$

Problem 300: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Cosh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 477 leaves, 16 steps):

$$\frac{e\,f\,x}{2\,b\,d}+\frac{f^2\,x^2}{4\,b\,d}-\frac{\left(a^2+b^2\right)\,\left(e+f\,x\right)^3}{3\,b^3\,f}+\frac{2\,a\,f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]}{b^2\,d^2}+$$
$$\frac{\left(a^2+b^2\right)\,\left(e+f\,x\right)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d}+\frac{\left(a^2+b^2\right)\,\left(e+f\,x\right)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d}+$$
$$\frac{2\,\left(a^2+b^2\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d^2}+$$
$$\frac{2\,\left(a^2+b^2\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d^2}-\frac{2\,\left(a^2+b^2\right)\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d^3}-$$
$$\frac{2\,\left(a^2+b^2\right)\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d^3}-\frac{2\,a\,f^2\,\text{Sinh}[c+d\,x]}{b^2\,d^3}-\frac{a\,\left(e+f\,x\right)^2\,\text{Sinh}[c+d\,x]}{b^2\,d}-$$
$$\frac{f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{2\,b\,d^2}+\frac{f^2\,\text{Sinh}[c+d\,x]^2}{4\,b\,d^3}+\frac{\left(e+f\,x\right)^2\,\text{Sinh}[c+d\,x]^2}{2\,b\,d}$$

Result (type 4, 1844 leaves):

$$\frac{1}{48\,b^3\,d^3}$$
$$e^{-2\,c}\,\Big(-48\,a^2\,d^3\,e^2\,e^{2\,c}\,x-48\,b^2\,d^3\,e^2\,e^{2\,c}\,x-48\,a^2\,d^3\,e\,e^{2\,c}\,f\,x^2-48\,b^2\,d^3\,e\,e^{2\,c}\,f\,x^2-16\,a^2\,d^3\,e^{2\,c}\,f^2\,x^3-$$
$$16\,b^2\,d^3\,e^{2\,c}\,f^2\,x^3+24\,a\,b\,d^2\,e^2\,e^{c}\,\text{Cosh}[d\,x]-24\,a\,b\,d^2\,e^2\,e^{3\,c}\,\text{Cosh}[d\,x]+$$
$$48\,a\,b\,d\,e\,e^{c}\,f\,\text{Cosh}[d\,x]+48\,a\,b\,d\,e\,e^{3\,c}\,f\,\text{Cosh}[d\,x]+48\,a\,b\,e^{c}\,f^2\,\text{Cosh}[d\,x]-$$
$$48\,a\,b\,e^{3\,c}\,f^2\,\text{Cosh}[d\,x]+48\,a\,b\,d^2\,e\,e^{c}\,f\,x\,\text{Cosh}[d\,x]-48\,a\,b\,d^2\,e\,e^{3\,c}\,f\,x\,\text{Cosh}[d\,x]+$$
$$48\,a\,b\,d\,e^{c}\,f^2\,x\,\text{Cosh}[d\,x]+48\,a\,b\,d\,e^{3\,c}\,f^2\,x\,\text{Cosh}[d\,x]+24\,a\,b\,d^2\,e^{c}\,f^2\,x^2\,\text{Cosh}[d\,x]-$$
$$24\,a\,b\,d^2\,e^{3\,c}\,f^2\,x^2\,\text{Cosh}[d\,x]+6\,b^2\,d^2\,e^2\,\text{Cosh}[2\,d\,x]+6\,b^2\,d^2\,e^2\,e^{4\,c}\,\text{Cosh}[2\,d\,x]+$$
$$6\,b^2\,d\,e\,f\,\text{Cosh}[2\,d\,x]-6\,b^2\,d\,e\,e^{4\,c}\,f\,\text{Cosh}[2\,d\,x]+3\,b^2\,f^2\,\text{Cosh}[2\,d\,x]+$$
$$3\,b^2\,e^{4\,c}\,f^2\,\text{Cosh}[2\,d\,x]+12\,b^2\,d^2\,e\,f\,x\,\text{Cosh}[2\,d\,x]+12\,b^2\,d^2\,e\,e^{4\,c}\,f\,x\,\text{Cosh}[2\,d\,x]+$$
$$6\,b^2\,d\,f^2\,x\,\text{Cosh}[2\,d\,x]-6\,b^2\,d\,e^{4\,c}\,f^2\,x\,\text{Cosh}[2\,d\,x]+6\,b^2\,d^2\,f^2\,x^2\,\text{Cosh}[2\,d\,x]+$$
$$6\,b^2\,d^2\,e^{4\,c}\,f^2\,x^2\,\text{Cosh}[2\,d\,x]+48\,a^2\,d^2\,e^2\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$48\,b^2\,d^2\,e^2\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+96\,a^2\,d^2\,e\,e^{2\,c}\,f\,x$$
$$\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+96\,b^2\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$48\,a^2\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+48\,b^2\,d^2\,e^{2\,c}\,f^2\,x^2$$
$$\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+96\,a^2\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$96\,b^2\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+48\,a^2\,d^2\,e^{2\,c}\,f^2\,x^2$$

$$\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+48\,b^2\,d^2\,e^{2c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$
$$96\,(a^2+b^2)\,d\,e^{2c}\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$
$$96\,(a^2+b^2)\,d\,e^{2c}\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$
$$96\,a^2\,e^{2c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-96\,b^2\,e^{2c}\,f^2$$
$$\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-96\,a^2\,e^{2c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$
$$96\,b^2\,e^{2c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-24\,a\,b\,d^2\,e^2\,e^{c}\,\text{Sinh}[d\,x]-$$
$$24\,a\,b\,d^2\,e^2\,e^{3c}\,\text{Sinh}[d\,x]-48\,a\,b\,d\,e\,e^{c}\,f\,\text{Sinh}[d\,x]+48\,a\,b\,d\,e\,e^{3c}\,f\,\text{Sinh}[d\,x]-$$
$$48\,a\,b\,e^{c}\,f^2\,\text{Sinh}[d\,x]-48\,a\,b\,e^{3c}\,f^2\,\text{Sinh}[d\,x]-48\,a\,b\,d^2\,e\,e^{c}\,f\,x\,\text{Sinh}[d\,x]-$$
$$48\,a\,b\,d^2\,e\,e^{3c}\,f\,x\,\text{Sinh}[d\,x]-48\,a\,b\,d\,e^{c}\,f^2\,x\,\text{Sinh}[d\,x]+48\,a\,b\,d\,e^{3c}\,f^2\,x\,\text{Sinh}[d\,x]-$$
$$24\,a\,b\,d^2\,e^{c}\,f^2\,x^2\,\text{Sinh}[d\,x]-24\,a\,b\,d^2\,e^{3c}\,f^2\,x^2\,\text{Sinh}[d\,x]-$$
$$6\,b^2\,d^2\,e^2\,\text{Sinh}[2\,d\,x]+6\,b^2\,d^2\,e^2\,e^{4c}\,\text{Sinh}[2\,d\,x]-6\,b^2\,d\,e\,f\,\text{Sinh}[2\,d\,x]-$$
$$6\,b^2\,d\,e\,e^{4c}\,f\,\text{Sinh}[2\,d\,x]-3\,b^2\,f^2\,\text{Sinh}[2\,d\,x]+3\,b^2\,e^{4c}\,f^2\,\text{Sinh}[2\,d\,x]-$$
$$12\,b^2\,d^2\,e\,f\,x\,\text{Sinh}[2\,d\,x]+12\,b^2\,d^2\,e\,e^{4c}\,f\,x\,\text{Sinh}[2\,d\,x]-6\,b^2\,d\,f^2\,x\,\text{Sinh}[2\,d\,x]-$$
$$\left.6\,b^2\,d\,e^{4c}\,f^2\,x\,\text{Sinh}[2\,d\,x]-6\,b^2\,d^2\,f^2\,x^2\,\text{Sinh}[2\,d\,x]+6\,b^2\,d^2\,e^{4c}\,f^2\,x^2\,\text{Sinh}[2\,d\,x]\right)$$

Problem 301: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 298 leaves, 13 steps):

$$\frac{f\,x}{4\,b\,d}-\frac{(a^2+b^2)\,(e+f\,x)^2}{2\,b^3\,f}+\frac{a\,f\,\text{Cosh}[c+d\,x]}{b^2\,d^2}+$$
$$\frac{(a^2+b^2)\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d}+\frac{(a^2+b^2)\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d}+$$
$$\frac{(a^2+b^2)\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d^2}+\frac{(a^2+b^2)\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d^2}-$$
$$\frac{a\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{b^2\,d}-\frac{f\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{4\,b\,d^2}+\frac{(e+f\,x)\,\text{Sinh}[c+d\,x]^2}{2\,b\,d}$$

Result (type 4, 755 leaves):

$$\frac{1}{8 b^3 d^2}\left(8 a b f \operatorname{Cosh}[c+d x]+2 b^2 d (e+f x) \operatorname{Cosh}[2 (c+d x)]+\right.$$

$$8 a^2 d e \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]+8 b^2 d e \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]-$$

$$8 a^2 c f \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]-8 b^2 c f \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]+8 a^2 f$$

$$\left(-\frac{1}{8}(2 c+i \pi+2 d x)^2-4 \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{ArcTan}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x+4 i \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x-4 i \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$\frac{1}{2} i \pi \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]+\operatorname{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\left.\operatorname{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right)+8 b^2 f$$

$$\left(-\frac{1}{8}(2 c+i \pi+2 d x)^2-4 \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{ArcTan}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x+4 i \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$
$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$
$$\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)-8\,a\,b\,d\,(e+f\,x)\,\text{Sinh}[c+d\,x]-b^2\,f\,\text{Sinh}[2\,(c+d\,x)]\Big)$$

Problem 303: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Cosh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 306: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Sech}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 334 leaves, 19 steps):

$$\frac{2\,a\,(e+f\,x)\,\text{ArcTan}\left[e^{c+d\,x}\right]}{\left(a^2+b^2\right)d}+\frac{b\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)d}+\frac{b\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)d}-$$
$$\frac{b\,(e+f\,x)\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]}{\left(a^2+b^2\right)d}-\frac{i\,a\,f\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{\left(a^2+b^2\right)d^2}+\frac{i\,a\,f\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]}{\left(a^2+b^2\right)d^2}+$$
$$\frac{b\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)d^2}+\frac{b\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)d^2}-\frac{b\,f\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]}{2\,\left(a^2+b^2\right)d^2}$$

Result (type 4, 732 leaves):

$$\frac{1}{8\left(a^2+b^2\right)d^2}$$

$$\left(8\,b\,c\,d\,e-8\,b\,c^2\,f-4\,i\,b\,c\,f\,\pi+b\,f\,\pi^2+8\,b\,d^2\,e\,x-8\,b\,c\,d\,f\,x-4\,i\,b\,d\,f\,\pi\,x-32\,b\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right.$$

$$\text{ArcTan}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{a^2+b^2}}\right]+16\,a\,d\,e\,\text{ArcTan}[\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]]+$$

$$16\,a\,d\,f\,x\,\text{ArcTan}[\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]]+8\,b\,c\,f\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$4\,i\,b\,f\,\pi\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+8\,b\,d\,f\,x\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$16\,i\,b\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$8\,b\,c\,f\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+4\,i\,b\,f\,\pi\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$8\,b\,d\,f\,x\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$16\,i\,b\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$4\,i\,b\,f\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+8\,b\,d\,e\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]-$$

$$8\,b\,c\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]-8\,b\,d\,e\,\text{Log}[1+\text{Cosh}[2\,(c+d\,x)]+\text{Sinh}[2\,(c+d\,x)]]-$$

$$8\,b\,d\,f\,x\,\text{Log}[1+\text{Cosh}[2\,(c+d\,x)]+\text{Sinh}[2\,(c+d\,x)]]+8\,b\,f\,\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$8\,b\,f\,\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-8\,i\,a\,f\,\text{PolyLog}[2,-i\,(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x])]+$$

$$8\,i\,a\,f\,\text{PolyLog}[2,i\,(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x])]-$$

$$\left.4\,b\,f\,\text{PolyLog}[2,-\text{Cosh}[2\,(c+d\,x)]-\text{Sinh}[2\,(c+d\,x)]]\right)$$

Problem 309: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Sech}[c+d x]^2}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 780 leaves, 29 steps):

$$\frac{a (e+f x)^3}{(a^2+b^2) d} - \frac{6 b f (e+f x)^2 \operatorname{ArcTan}[e^{c+d x}]}{(a^2+b^2) d^2} + \frac{b^2 (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d} - \frac{b^2 (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d} - \frac{3 a f (e+f x)^2 \operatorname{Log}[1+e^{2 (c+d x)}]}{(a^2+b^2) d^2} + \frac{6 i b f^2 (e+f x) \operatorname{PolyLog}[2,-i e^{c+d x}]}{(a^2+b^2) d^3} - \frac{6 i b f^2 (e+f x) \operatorname{PolyLog}[2,i e^{c+d x}]}{(a^2+b^2) d^3} + \frac{3 b^2 f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d^2} - \frac{3 b^2 f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d^2} - \frac{3 a f^2 (e+f x) \operatorname{PolyLog}[2,-e^{2 (c+d x)}]}{(a^2+b^2) d^3} - \frac{6 i b f^3 \operatorname{PolyLog}[3,-i e^{c+d x}]}{(a^2+b^2) d^4} + \frac{6 i b f^3 \operatorname{PolyLog}[3,i e^{c+d x}]}{(a^2+b^2) d^4} - \frac{6 b^2 f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d^3} + \frac{6 b^2 f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d^3} + \frac{3 a f^3 \operatorname{PolyLog}[3,-e^{2 (c+d x)}]}{2 (a^2+b^2) d^4} + \frac{6 b^2 f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d^4} - \frac{6 b^2 f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2} d^4} + \frac{b (e+f x)^3 \operatorname{Sech}[c+d x]}{(a^2+b^2) d} + \frac{a (e+f x)^3 \operatorname{Tanh}[c+d x]}{(a^2+b^2) d}$$

Result (type 4, 1610 leaves):

$$-\frac{1}{2 (a^2+b^2) d^4 (1+e^{2 c})} f \Big(-12 a d^3 e^2 e^{2 c} x + 12 a d^3 e^2 (1+e^{2 c}) x + 12 a d^3 e f x^2 + 4 a d^3 f^2 x^3 + 12 b d^2 e^2 (1+e^{2 c}) \operatorname{ArcTan}[e^{c+d x}] - 6 a d^2 e^2 (1+e^{2 c}) (2 d x - \operatorname{Log}[1+e^{2 (c+d x)}]) + 12 i b d e (1+e^{2 c}) f (d x (\operatorname{Log}[1-i e^{c+d x}] - \operatorname{Log}[1+i e^{c+d x}]) - \operatorname{PolyLog}[2,-i e^{c+d x}] + \operatorname{PolyLog}[2,i e^{c+d x}]) - 6 a d e (1+e^{2 c}) f (2 d x (d x - \operatorname{Log}[1+e^{2 (c+d x)}]) - \operatorname{PolyLog}[2,-e^{2 (c+d x)}]) + 6 i b (1+e^{2 c}) f^2 (d^2 x^2 \operatorname{Log}[1-i e^{c+d x}] - d^2 x^2 \operatorname{Log}[1+i e^{c+d x}] - 2 d x \operatorname{PolyLog}[2,-i e^{c+d x}] + 2 d x \operatorname{PolyLog}[2,i e^{c+d x}] + 2 \operatorname{PolyLog}[3,-i e^{c+d x}] - 2 \operatorname{PolyLog}[3,i e^{c+d x}]) - a (1+e^{2 c}) f^2 (2 d^2 x^2 (2 d x - 3 \operatorname{Log}[1+e^{2 (c+d x)}]) - 6 d x \operatorname{PolyLog}[2,-e^{2 (c+d x)}] + $$

$$3\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]\Big)\Big)\Big)-$$

$$\frac{1}{\left(-a^2-b^2\right)^{3/2}\,d^4\,\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\,b^2\,\Bigg(2\,d^3\,e^3\,\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}\;\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]+$$

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

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

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

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

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

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

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

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

$$6\,\sqrt{-a^2-b^2}\;d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\sqrt{-a^2-b^2}\;d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\;d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\;d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\;e^c\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\sqrt{-a^2-b^2}\;e^c\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)+$$

$$\frac{1}{\left(a^2+b^2\right)\,d}\text{Sech}[c]\;\text{Sech}[c+d\,x]\;\left(b\,e^3\,\text{Cosh}[c]+3\,b\,e^2\,f\,x\,\text{Cosh}[c]+\right.$$

$$3\,b\,e\,f^2\,x^2\,\text{Cosh}[c]+b\,f^3\,x^3\,\text{Cosh}[c]+a\,e^3\,\text{Sinh}[d\,x]+3\,a\,e^2\,f\,x\,\text{Sinh}[d\,x]+3\,a\,e\,f^2\,x^2\,\text{Sinh}[d\,x]+a\,f^3\,x^3\,\text{Sinh}[d\,x]\Big)$$

Problem 310: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^2\,\text{Sech}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 548 leaves, 24 steps):

$$\frac{a\,(e+f\,x)^2}{(a^2+b^2)\,d}-\frac{4\,b\,f\,(e+f\,x)\,\text{ArcTan}\left[e^{c+d\,x}\right]}{(a^2+b^2)\,d^2}+\frac{b^2\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d}-\frac{b^2\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d}-\frac{2\,a\,f\,(e+f\,x)\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]}{(a^2+b^2)\,d^2}+\frac{2\,i\,b\,f^2\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]}{(a^2+b^2)\,d^3}-\frac{2\,i\,b\,f^2\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]}{(a^2+b^2)\,d^3}+\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^2}-\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^2}-\frac{a\,f^2\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]}{(a^2+b^2)\,d^3}-\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^3}+\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^3}+\frac{b\,(e+f\,x)^2\,\text{Sech}[c+d\,x]}{(a^2+b^2)\,d}+\frac{a\,(e+f\,x)^2\,\text{Tanh}[c+d\,x]}{(a^2+b^2)\,d}$$

Result (type 4, 1180 leaves):

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

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

$$\left(2\,a\,e\,f\,\text{Sech}[c]\,\left(\text{Cosh}[c]\,\text{Log}[\text{Cosh}[c]\,\text{Cosh}[d\,x]+\text{Sinh}[c]\,\text{Sinh}[d\,x]]-d\,x\,\text{Sinh}[c]\right)\right)\Big/$$
$$\left(\left(a^2+b^2\right)\,d^2\,\left(\text{Cosh}[c]^2-\text{Sinh}[c]^2\right)\right)-$$

$$\frac{4\,b\,e\,f\,\text{ArcTan}\left[\frac{\text{Sinh}[c]+\text{Cosh}[c]\,\text{Tanh}\left[\frac{d\,x}{2}\right]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right]}{\left(a^2+b^2\right)\,d^2\,\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}+$$

$$\left(a\,f^2\,\text{Csch}[c]\right.$$

$$\left(-d^2\,e^{-\text{ArcTanh}[\text{Coth}[c]]}\,x^2+\frac{1}{\sqrt{1-\text{Coth}[c]^2}}\,i\,\text{Coth}[c]\,\left(-d\,x\,\left(-\pi+2\,i\,\text{ArcTanh}[\text{Coth}[c]]\right)-\right.\right.$$
$$\pi\,\text{Log}\left[1+e^{2\,d\,x}\right]-2\,\left(i\,d\,x+i\,\text{ArcTanh}[\text{Coth}[c]]\right)\,\text{Log}\left[1-e^{2\,i\,(i\,d\,x+i\,\text{ArcTanh}[\text{Coth}[c]])}\right]+$$
$$\pi\,\text{Log}[\text{Cosh}[d\,x]]+2\,i\,\text{ArcTanh}[\text{Coth}[c]]\,\text{Log}[i\,\text{Sinh}[d\,x+\text{ArcTanh}[\text{Coth}[c]]]]+$$
$$\left.\left.\left.i\,\text{PolyLog}\left[2,e^{2\,i\,(i\,d\,x+i\,\text{ArcTanh}[\text{Coth}[c]])}\right]\right)\right)\,\text{Sech}[c]\right)\Big/$$

$$\left(\left(a^2+b^2\right)\,d^3\,\sqrt{\text{Csch}[c]^2\,\left(-\text{Cosh}[c]^2+\text{Sinh}[c]^2\right)}\right)-\frac{1}{\left(a^2+b^2\right)\,d^3}2$$

$$b$$
$$f^2$$

$$\left(-\frac{1}{\sqrt{1-\text{Coth}[c]^2}}\,i\,\text{Csch}[c]\right.$$

$$\left(i\,\left(d\,x+\text{ArcTanh}[\text{Coth}[c]]\right)\,\left(\text{Log}\left[1-e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]-\text{Log}\left[1+e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]\right)+\right.$$
$$\left.i\,\left(\text{PolyLog}\left[2,-e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]-\text{PolyLog}\left[2,e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]\right)\right)-$$

$$\left.\frac{2\,\text{ArcTan}\left[\frac{\text{Sinh}[c]+\text{Cosh}[c]\,\text{Tanh}\left[\frac{d\,x}{2}\right]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right]\,\text{ArcTanh}[\text{Coth}[c]]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right)+\frac{1}{\left(a^2+b^2\right)\,d}$$

$$\text{Sech}[c]\,\text{Sech}[c+d\,x]\,\left(b\,e^2\,\text{Cosh}[c]+2\,b\,e\,f\,x\,\text{Cosh}[c]+b\,f^2\,x^2\,\text{Cosh}[c]+\right.$$
$$\left.a\,e^2\,\text{Sinh}[d\,x]+2\,a\,e\,f\,x\,\text{Sinh}[d\,x]+a\,f^2\,x^2\,\text{Sinh}[d\,x]\right)$$

Problem 311: Result unnecessarily involves imaginary or complex numbers.

$$\int\frac{(e+f\,x)\,\text{Sech}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 295 leaves, 15 steps):

$$-\frac{b\,f\,\text{ArcTan}[\text{Sinh}[c+d\,x]]}{\left(a^2+b^2\right)d^2}+\frac{b^2\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^{3/2}d}-\frac{b^2\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^{3/2}d}-\frac{a\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{\left(a^2+b^2\right)d^2}+\frac{b^2\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^{3/2}d^2}-\frac{b^2\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^{3/2}d^2}+\frac{b\,(e+f\,x)\,\text{Sech}[c+d\,x]}{\left(a^2+b^2\right)d}+\frac{a\,(e+f\,x)\,\text{Tanh}[c+d\,x]}{\left(a^2+b^2\right)d}$$

Result (type 4, 485 leaves):

$$\frac{i\,f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]\right]}{(a-i\,b)\,d^2}-\frac{i\,f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]\right]}{(a+i\,b)\,d^2}-\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{2\,(a-i\,b)\,d^2}-\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{2\,(a+i\,b)\,d^2}-$$
$$\left(b^2\left(a^2+b^2\right)\left(2\sqrt{a^2+b^2}\,d\,e\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]-2\sqrt{a^2+b^2}\,c\,f\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]+\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]+\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)\Big/$$
$$\left(\left(-\left(a^2+b^2\right)^2\right)^{3/2}d^2\right)+\frac{1}{\left(a^2+b^2\right)d^2}\text{Sech}[c+d\,x]$$
$$(b\,d\,e-b\,c\,f+b\,f\,(c+d\,x)+a\,d\,e\,\text{Sinh}[c+d\,x]-a\,c\,f\,\text{Sinh}[c+d\,x]+a\,f\,(c+d\,x)\,\text{Sinh}[c+d\,x])$$

Problem 314: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Sech}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 928 leaves, 39 steps):

$$\frac{2 a b^2 (e+f x)^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right)^2 d}+\frac{a (e+f x)^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right) d}-\frac{a f^2 \operatorname{ArcTan}[\operatorname{Sinh}[c+d x]]}{\left(a^2+b^2\right) d^3}+$$

$$\frac{b^3 (e+f x)^2 \operatorname{Log}\left[1+\frac{b\,\mathrm{e}^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d}+\frac{b^3 (e+f x)^2 \operatorname{Log}\left[1+\frac{b\,\mathrm{e}^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d}-\frac{b^3 (e+f x)^2 \operatorname{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]}{\left(a^2+b^2\right)^2 d}+$$

$$\frac{b f^2 \operatorname{Log}[\operatorname{Cosh}[c+d x]]}{\left(a^2+b^2\right) d^3}-\frac{2 \mathrm{i} a b^2 f (e+f x) \operatorname{PolyLog}\left[2,-\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right)^2 d^2}-$$

$$\frac{\mathrm{i} a f (e+f x) \operatorname{PolyLog}\left[2,-\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right) d^2}+\frac{2 \mathrm{i} a b^2 f (e+f x) \operatorname{PolyLog}\left[2,\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right)^2 d^2}+$$

$$\frac{\mathrm{i} a f (e+f x) \operatorname{PolyLog}\left[2,\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right) d^2}+\frac{2 b^3 f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b\,\mathrm{e}^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^2}+$$

$$\frac{2 b^3 f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b\,\mathrm{e}^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^2}-\frac{b^3 f (e+f x) \operatorname{PolyLog}\left[2,-\mathrm{e}^{2 (c+d x)}\right]}{\left(a^2+b^2\right)^2 d^2}+$$

$$\frac{2 \mathrm{i} a b^2 f^2 \operatorname{PolyLog}\left[3,-\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right)^2 d^3}+\frac{\mathrm{i} a f^2 \operatorname{PolyLog}\left[3,-\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right) d^3}-\frac{2 \mathrm{i} a b^2 f^2 \operatorname{PolyLog}\left[3,\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right)^2 d^3}-$$

$$\frac{\mathrm{i} a f^2 \operatorname{PolyLog}\left[3,\mathrm{i}\,\mathrm{e}^{c+d x}\right]}{\left(a^2+b^2\right) d^3}-\frac{2 b^3 f^2 \operatorname{PolyLog}\left[3,-\frac{b\,\mathrm{e}^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^3}-\frac{2 b^3 f^2 \operatorname{PolyLog}\left[3,-\frac{b\,\mathrm{e}^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^3}+$$

$$\frac{b^3 f^2 \operatorname{PolyLog}\left[3,-\mathrm{e}^{2 (c+d x)}\right]}{2 \left(a^2+b^2\right)^2 d^3}+\frac{a f (e+f x) \operatorname{Sech}[c+d x]}{\left(a^2+b^2\right) d^2}+\frac{b (e+f x)^2 \operatorname{Sech}[c+d x]^2}{2 \left(a^2+b^2\right) d}-$$

$$\frac{b f (e+f x) \operatorname{Tanh}[c+d x]}{\left(a^2+b^2\right) d^2}+\frac{a (e+f x)^2 \operatorname{Sech}[c+d x] \operatorname{Tanh}[c+d x]}{2 \left(a^2+b^2\right) d}$$

Result (type 4, 3102 leaves):

$$-\frac{1}{6 \left(a^2+b^2\right)^2 d^3 \left(1+\mathrm{e}^{2 c}\right)}$$

$$\Big(-12 b^3 d^3 e^2 \mathrm{e}^{2 c} x+12 a^2 b d \mathrm{e}^{2 c} f^2 x+12 b^3 d \mathrm{e}^{2 c} f^2 x-12 b^3 d^3 e \mathrm{e}^{2 c} f x^2-4 b^3 d^3 \mathrm{e}^{2 c} f^2 x^3-$$

$$6 a^3 d^2 e^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]-18 a b^2 d^2 e^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]-6 a^3 d^2 e^2 \mathrm{e}^{2 c} \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]-$$

$$18 a b^2 d^2 e^2 \mathrm{e}^{2 c} \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]+12 a^3 f^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]+12 a b^2 f^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]+$$

$$12 a^3 \mathrm{e}^{2 c} f^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]+12 a b^2 \mathrm{e}^{2 c} f^2 \operatorname{ArcTan}\left[\mathrm{e}^{c+d x}\right]-6 \mathrm{i} a^3 d^2 e f x \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-$$

$$18 \mathrm{i} a b^2 d^2 e f x \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-6 \mathrm{i} a^3 d^2 e \mathrm{e}^{2 c} f x \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-$$

$$18 \mathrm{i} a b^2 d^2 e \mathrm{e}^{2 c} f x \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-3 \mathrm{i} a^3 d^2 f^2 x^2 \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-$$

$$9 \mathrm{i} a b^2 d^2 f^2 x^2 \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-3 \mathrm{i} a^3 d^2 \mathrm{e}^{2 c} f^2 x^2 \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]-$$

$$9 \mathrm{i} a b^2 d^2 \mathrm{e}^{2 c} f^2 x^2 \operatorname{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d x}\right]+6 \mathrm{i} a^3 d^2 e f x \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+$$

$$18 \mathrm{i} a b^2 d^2 e f x \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+6 \mathrm{i} a^3 d^2 e \mathrm{e}^{2 c} f x \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+$$

$$18 \mathrm{i} a b^2 d^2 e \mathrm{e}^{2 c} f x \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+3 \mathrm{i} a^3 d^2 f^2 x^2 \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+$$

$$9 \mathrm{i} a b^2 d^2 f^2 x^2 \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+3 \mathrm{i} a^3 d^2 \mathrm{e}^{2 c} f^2 x^2 \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+$$

$$9 \mathrm{i} a b^2 d^2 \mathrm{e}^{2 c} f^2 x^2 \operatorname{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d x}\right]+6 b^3 d^2 e^2 \operatorname{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+$$

$$6 b^3 d^2 e^2 e^{2 c} \text{Log}\left[1+e^{2 (c+d x)}\right]-6 a^2 b f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]-6 b^3 f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]-$$
$$6 a^2 b e^{2 c} f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]-6 b^3 e^{2 c} f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+12 b^3 d^2 e f x \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$12 b^3 d^2 e e^{2 c} f x \text{Log}\left[1+e^{2 (c+d x)}\right]+6 b^3 d^2 f^2 x^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$6 b^3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+6 i a \left(a^2+3 b^2\right) d \left(1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]-$$
$$6 i a \left(a^2+3 b^2\right) d \left(1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,i e^{c+d x}\right]+$$
$$6 b^3 d e f \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+6 b^3 d e e^{2 c} f \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+$$
$$6 b^3 d f^2 x \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+6 b^3 d e^{2 c} f^2 x \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]-$$
$$6 i a^3 f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]-18 i a b^2 f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]-$$
$$6 i a^3 e^{2 c} f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]-18 i a b^2 e^{2 c} f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]+$$
$$6 i a^3 f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]+18 i a b^2 f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]+$$
$$6 i a^3 e^{2 c} f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]+18 i a b^2 e^{2 c} f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]-$$
$$3 b^3 f^2 \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]-3 b^3 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]\Big)-$$

$$\frac{1}{3 \left(a^2+b^2\right)^2 d^3 \left(-1+e^{2 c}\right)} b^3 \Bigg(6 d^3 e^2 e^{2 c} x+6 d^3 e e^{2 c} f x^2+2 d^3 e^{2 c} f^2 x^3+$$
$$3 d^2 e^2 \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]-3 d^2 e^2 e^{2 c} \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]+$$
$$6 d^2 e f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e e^{2 c} f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$6 d^2 e f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e e^{2 c} f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\Bigg)+$$

$$\frac{1}{24 \left(a^2+b^2\right)^2 d^2} \text{Csch}[c] \text{Sech}[c] \text{Sech}[c+d x]^2 \Big(-6 a^2 b e f-6 b^3 e f+12 b^3 d^2 e^2 x-$$
$$6 a^2 b f^2 x-6 b^3 f^2 x+12 b^3 d^2 e f x^2+4 b^3 d^2 f^2 x^3+6 a^2 b e f \text{Cosh}[2 c]+$$
$$6 b^3 e f \text{Cosh}[2 c]+6 a^2 b f^2 x \text{Cosh}[2 c]+6 b^3 f^2 x \text{Cosh}[2 c]+6 a^2 b e f \text{Cosh}[2 d x]+$$
$$6 b^3 e f \text{Cosh}[2 d x]+6 a^2 b f^2 x \text{Cosh}[2 d x]+6 b^3 f^2 x \text{Cosh}[2 d x]-3 a^3 d e^2 \text{Cosh}[c-d x]-$$
$$3 a b^2 d e^2 \text{Cosh}[c-d x]-6 a^3 d e f x \text{Cosh}[c-d x]-6 a b^2 d e f x \text{Cosh}[c-d x]-$$
$$3 a^3 d f^2 x^2 \text{Cosh}[c-d x]-3 a b^2 d f^2 x^2 \text{Cosh}[c-d x]+3 a^3 d e^2 \text{Cosh}[3 c+d x]+$$
$$3 a b^2 d e^2 \text{Cosh}[3 c+d x]+6 a^3 d e f x \text{Cosh}[3 c+d x]+6 a b^2 d e f x \text{Cosh}[3 c+d x]+$$

$3 a^3 d f^2 x^2 \text{Cosh}[3 c+d x]+3 a b^2 d f^2 x^2 \text{Cosh}[3 c+d x]-6 a^2 b e f \text{Cosh}[2 c+2 d x]-$
$6 b^3 e f \text{Cosh}[2 c+2 d x]+12 b^3 d^2 e^2 x \text{Cosh}[2 c+2 d x]-6 a^2 b f^2 x \text{Cosh}[2 c+2 d x]-$
$6 b^3 f^2 x \text{Cosh}[2 c+2 d x]+12 b^3 d^2 e f x^2 \text{Cosh}[2 c+2 d x]+4 b^3 d^2 f^2 x^3 \text{Cosh}[2 c+2 d x]+$
$6 a^2 b d e^2 \text{Sinh}[2 c]+6 b^3 d e^2 \text{Sinh}[2 c]+12 a^2 b d e f x \text{Sinh}[2 c]+12 b^3 d e f x \text{Sinh}[2 c]+$
$6 a^2 b d f^2 x^2 \text{Sinh}[2 c]+6 b^3 d f^2 x^2 \text{Sinh}[2 c]+6 a^3 e f \text{Sinh}[c-d x]+6 a b^2 e f \text{Sinh}[c-d x]+$
$6 a^3 f^2 x \text{Sinh}[c-d x]+6 a b^2 f^2 x \text{Sinh}[c-d x]+6 a^3 e f \text{Sinh}[3 c+d x]+$
$6 a b^2 e f \text{Sinh}[3 c+d x]+6 a^3 f^2 x \text{Sinh}[3 c+d x]+6 a b^2 f^2 x \text{Sinh}[3 c+d x])$

Problem 317: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d x]^3}{(e+f x)\,(a+b \text{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d x]^3}{(e+f x)\,(a+b \text{Sinh}[c+d x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 328: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \text{Cosh}[c+d x]}{(a+b \text{Sinh}[c+d x])^3}\,dx$$

Optimal (type 4, 306 leaves, 12 steps):

$$\frac{a f (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d^2}-\frac{a f (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d^2}+$$
$$\frac{f^2 \text{Log}[a+b \text{Sinh}[c+d x]]}{b \left(a^2+b^2\right) d^3}+\frac{a f^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d^3}-\frac{a f^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d^3}-$$
$$\frac{(e+f x)^2}{2 b d (a+b \text{Sinh}[c+d x])^2}-\frac{f (e+f x) \text{Cosh}[c+d x]}{\left(a^2+b^2\right) d^2 (a+b \text{Sinh}[c+d x])}$$

Result (type 4, 770 leaves):

$$\frac{f^2\,x\,\text{Coth}[c]}{b\,\left(a^2+b^2\right)\,d^2}+$$

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

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

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

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

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

$$\frac{f^2\,x\,\text{Cosh}[c]\,\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]}{2\,b\,\left(a^2+b^2\right)\,d^2}-\frac{(e+f\,x)^2}{2\,b\,d\,\left(a+b\,\text{Sinh}[c+d\,x]\right)^2}+$$

$$\left(\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]\,\left(a\,e\,f\,\text{Cosh}[c]+a\,f^2\,x\,\text{Cosh}[c]+b\,e\,f\,\text{Sinh}[d\,x]+b\,f^2\,x\,\text{Sinh}[d\,x]\right)\right)\Big/$$
$$\left(2\,b\,\left(a^2+b^2\right)\,d^2\,\left(a+b\,\text{Sinh}[c+d\,x]\right)\right)$$

Problem 329: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Cosh}[c+d\,x]}{\left(a+b\,\text{Sinh}[c+d\,x]\right)^3}\,dx$$

Optimal (type 4, 631 leaves, 19 steps):

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

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

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

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

$$\frac{3 a f^3 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b (a^2+b^2)^{3/2} d^4}-\frac{(e+f x)^3}{2 b d (a+b \text{Sinh}[c+d x])^2}-\frac{3 f (e+f x)^2 \text{Cosh}[c+d x]}{2 (a^2+b^2) d^2 (a+b \text{Sinh}[c+d x])}$$

Result (type 4, 5785 leaves):

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

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

$$\frac{a e^2 e^c \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{2 a e e^{-c} f \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\, d}-\frac{2 a e e^c f \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\, d}-$$

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

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

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

$$\left.\frac{x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]}{d \left(a e^c-\sqrt{(a^2+b^2) e^{2 c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]}{d^2 \left(a e^c-\sqrt{(a^2+b^2) e^{2 c}}\right)}\right)\Bigg/$$

$$\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\Bigg)+$$

$$\left(\frac{x^2}{2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}\right)\Bigg/$$

$$\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\Bigg)+$$

$$2\,b\,e^c f^2\Bigg(-\Bigg(\Bigg(\frac{x^2}{2\left(a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-$$

$$\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}\Bigg)\Bigg/$$

$$\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\Bigg)+$$

$$\left(\frac{x^2}{2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}\right)\Bigg/$$

$$\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\Bigg)-$$

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

$$\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}\right)}\Bigg)\Bigg)\Bigg/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\right)\Bigg)+$$

$$\left(\left(-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}\right)\left(\frac{x^2}{2\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\Bigg)+$$

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

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\Bigg)+$$

$$\left(\left(-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}\right)\left(\frac{x^2}{2\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\Bigg)+$$

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

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}\right)\right)+$$

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

$$\left.\left.\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}\right)\right)-$$

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

$$\left.\left.\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}\right)\right)+$$

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

$$\left.\left.\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2e^{2c}+b^2e^{2c}}}{b}\right)\right)-$$

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

$$\frac{x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{2\,x\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}+$$

$$\left.\left.\frac{2\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^3\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)+$$

$$\left(\left(-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}\right)\left(\frac{x^3}{3\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\right.\right.$$

$$\left.\left.\frac{2\,x\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}+\frac{2\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^3\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)+$$

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

$$\frac{x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{2\,x\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}+$$

$$\left.\left.\frac{2\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^3\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)+$$

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

$$\frac{x^2 \operatorname{Log}\left[1+\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d\left(a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}-\frac{2\, x \operatorname{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d^2\left(a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}+$$

$$\left.\left.\frac{2 \operatorname{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d^3\left(a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}\right)\right)\Big/$$

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

$$\frac{(e+f x)^3}{2\, b\, d\, (a+b \operatorname{Sinh}[c+d x])^2}+\left(3 \operatorname{Csch}\left[\frac{c}{2}\right] \operatorname{Sech}\left[\frac{c}{2}\right]\left(a\, e^2 f \operatorname{Cosh}[c]+2\, a\, e\, f^2 x \operatorname{Cosh}[c]+a\, f^3 x^2 \operatorname{Cosh}[c]+b\, e^2 f \operatorname{Sinh}[d x]+2\, b\, e\, f^2 x \operatorname{Sinh}[d x]+b\, f^3 x^2 \operatorname{Sinh}[d x]\right)\right)\Big/\left(4\, b\left(a^2+b^2\right) d^2\, (a+b \operatorname{Sinh}[c+d x])\right)$$

Problem 331: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Cosh}[c+d x]}{(a+b \operatorname{Sinh}[c+d x])^3}\, dx$$

Optimal (type 4, 306 leaves, 12 steps):

$$\frac{a\, f\, (e+f x) \operatorname{Log}\left[1+\frac{b\, e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{b\left(a^2+b^2\right)^{3/2} d^2}-\frac{a\, f\, (e+f x) \operatorname{Log}\left[1+\frac{b\, e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{b\left(a^2+b^2\right)^{3/2} d^2}+$$

$$\frac{f^2 \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]}{b\left(a^2+b^2\right) d^3}+\frac{a\, f^2 \operatorname{PolyLog}\left[2,-\frac{b\, e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{b\left(a^2+b^2\right)^{3/2} d^3}-\frac{a\, f^2 \operatorname{PolyLog}\left[2,-\frac{b\, e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{b\left(a^2+b^2\right)^{3/2} d^3}-$$

$$\frac{(e+f x)^2}{2\, b\, d\, (a+b \operatorname{Sinh}[c+d x])^2}-\frac{f\, (e+f x) \operatorname{Cosh}[c+d x]}{\left(a^2+b^2\right) d^2\, (a+b \operatorname{Sinh}[c+d x])}$$

Result (type 4, 770 leaves):

$$\frac{f^2\,x\,\text{Coth}[c]}{b\,\left(a^2+b^2\right)\,d^2}+$$

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

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

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

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

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

$$\frac{f^2\,x\,\text{Cosh}[c]\,\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]}{2\,b\,\left(a^2+b^2\right)\,d^2}-\frac{(e+f\,x)^2}{2\,b\,d\,\left(a+b\,\text{Sinh}[c+d\,x]\right)^2}+$$

$$\left(\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]\,\left(a\,e\,f\,\text{Cosh}[c]+a\,f^2\,x\,\text{Cosh}[c]+b\,e\,f\,\text{Sinh}[d\,x]+b\,f^2\,x\,\text{Sinh}[d\,x]\right)\right)\Big/$$
$$\left(2\,b\,\left(a^2+b^2\right)\,d^2\,\left(a+b\,\text{Sinh}[c+d\,x]\right)\right)$$

Problem 332: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Cosh}[c+d\,x]}{\left(a+b\,\text{Sinh}[c+d\,x]\right)^3}\,dx$$

Optimal (type 4, 631 leaves, 19 steps):

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

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

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

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

$$\frac{3 a f^3 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b (a^2+b^2)^{3/2} d^4}-\frac{(e+f x)^3}{2 b d (a+b \text{Sinh}[c+d x])^2}-\frac{3 f (e+f x)^2 \text{Cosh}[c+d x]}{2 (a^2+b^2) d^2 (a+b \text{Sinh}[c+d x])}$$

Result (type 4, 5785 leaves):

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

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

$$\frac{a e^2 e^c \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{2 a e e^{-c} f \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2} d}-\frac{2 a e e^c f \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2} d}-$$

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

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

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

$$\left.\frac{x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]}{d \left(a e^c-\sqrt{(a^2+b^2) e^{2 c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]}{d^2 \left(a e^c-\sqrt{(a^2+b^2) e^{2 c}}\right)}\right) \Big/$$

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

$$\left(\frac{x^2}{2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\Big/$$

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

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

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

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

$$\left(\frac{x^2}{2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\Big/$$

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

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

$$\left.\left.\frac{x\,\mathrm{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\mathrm{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

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

$$\left(\left(-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}\right)\left(\frac{x^2}{2\left(a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+d x}}{a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+d x}}{a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}\right)\right)\Bigg/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\right)\Bigg)+$$

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

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\right)\Bigg)+$$

$$\left(\left(-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}\right)\left(\frac{x^2}{2\left(a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}-\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+d x}}{a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+d x}}{a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}\right)}\right)\right)\Bigg/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2 e^{2c}+b^2 e^{2c}}}{b}\right)\right)\Bigg)+$$

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

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)+$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)-$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)+$$

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

$$\left.\left.\frac{x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}-\frac{\text{PolyLog}\left[2,-\frac{b\,e^{2c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^2\left(a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

$$\left(b\left(\frac{-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}-\frac{-a\,e^{-c}+e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}}{b}\right)\right)\right)-$$

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

$$\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}+$$

$$\left.\left.\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^3\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

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

$$\left(\left(-a\,e^{-c}-e^{-2c}\sqrt{a^2\,e^{2c}+b^2\,e^{2c}}\right)\left(\frac{x^3}{3\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\right.\right.$$

$$\left.\left.\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}+\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^3\left(a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

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

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

$$\frac{x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}-\frac{2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^2\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}+$$

$$\left.\left.\frac{2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]}{d^3\left(a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}\right)}\right)\right)\Big/$$

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

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

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

$$\left.\left.\frac{2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]}{d^3\left(a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}\right)}\right)\right)\Big/$$

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

$$\frac{(e+f\,x)^3}{2\,b\,d\,\left(a+b\,\text{Sinh}[c+d\,x]\right)^2}+\left(3\,\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]\right.$$

$$\left(a\,e^2\,f\,\text{Cosh}[c]+2\,a\,e\,f^2\,x\,\text{Cosh}[c]+a\,f^3\,x^2\,\text{Cosh}[c]+b\,e^2\,f\,\text{Sinh}[d\,x]+2\,b\,e\,f^2\,x\,\text{Sinh}[d\,x]+\left.b\,f^3\,x^2\,\text{Sinh}[d\,x]\right)\right)\Big/$$

$$\left(4\,b\,\left(a^2+b^2\right)\,d^2\,\left(a+b\,\text{Sinh}[c+d\,x]\right)\right)$$

Problem 333: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 448 leaves, 16 steps):

$$\frac{a\,(e+f\,x)^4}{4\,b^2\,f}-\frac{6\,f^3\,\text{Cosh}[c+d\,x]}{b\,d^4}-\frac{3\,f\,(e+f\,x)^2\,\text{Cosh}[c+d\,x]}{b\,d^2}-\frac{a\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d}-$$

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

$$\frac{3\,a\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d^2}+\frac{6\,a\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d^3}+$$

$$\frac{6\,a\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d^3}-\frac{6\,a\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,d^4}-$$

$$\frac{6\,a\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,d^4}+\frac{6\,f^2\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{b\,d^3}+\frac{(e+f\,x)^3\,\text{Sinh}[c+d\,x]}{b\,d}$$

Result (type 4, 1518 leaves):

$$\frac{1}{4 b^2 d^4} e^{-c} \Big(4 a d^4 e^3 e^c x + 6 a d^4 e^2 e^c f x^2 + 4 a d^4 e e^c f^2 x^3 + a d^4 e^c f^3 x^4 - 2 b d^3 e^3 \text{Cosh}[d x] + 2 b d^3 e^3 e^{2 c} \text{Cosh}[d x] - 6 b d^2 e^2 f \text{Cosh}[d x] - 6 b d^2 e^2 e^{2 c} f \text{Cosh}[d x] - 12 b d e f^2 \text{Cosh}[d x] + 12 b d e e^{2 c} f^2 \text{Cosh}[d x] - 12 b f^3 \text{Cosh}[d x] - 12 b e^{2 c} f^3 \text{Cosh}[d x] - 6 b d^3 e^2 f x \text{Cosh}[d x] + 6 b d^3 e^2 e^{2 c} f x \text{Cosh}[d x] - 12 b d^2 e f^2 x \text{Cosh}[d x] - 12 b d^2 e e^{2 c} f^2 x \text{Cosh}[d x] - 12 b d f^3 x \text{Cosh}[d x] + 12 b d e^{2 c} f^3 x \text{Cosh}[d x] - 6 b d^3 e f^2 x^2 \text{Cosh}[d x] + 6 b d^3 e e^{2 c} f^2 x^2 \text{Cosh}[d x] - 6 b d^2 f^3 x^2 \text{Cosh}[d x] - 6 b d^2 e^{2 c} f^3 x^2 \text{Cosh}[d x] - 2 b d^3 f^3 x^3 \text{Cosh}[d x] + 2 b d^3 e^{2 c} f^3 x^3 \text{Cosh}[d x] - 4 a d^3 e^3 e^c \text{Log}\left[2 a e^{c+d x} + b \left(-1 + e^{2 (c+d x)}\right)\right] - 12 a d^3 e^2 e^c f x \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] - 12 a d^3 e e^c f^2 x^2 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] - 4 a d^3 e^c f^3 x^3 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] - 12 a d^3 e^2 e^c f x \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] - 12 a d^3 e e^c f^2 x^2 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] - 4 a d^3 e^c f^3 x^3 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] - 12 a d^2 e^c f (e+f x)^2 \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] - 12 a d^2 e^c f (e+f x)^2 \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] + 24 a d e e^c f^2 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] + 24 a d e^c f^3 x \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] + 24 a d e e^c f^2 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] + 24 a d e^c f^3 x \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] - 24 a e^c f^3 \text{PolyLog}\left[4, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{(a^2+b^2) e^{2 c}}}\right] - 24 a e^c f^3 \text{PolyLog}\left[4, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{(a^2+b^2) e^{2 c}}}\right] + 2 b d^3 e^3 \text{Sinh}[d x] + 2 b d^3 e^3 e^{2 c} \text{Sinh}[d x] + 6 b d^2 e^2 f \text{Sinh}[d x] - 6 b d^2 e^2 e^{2 c} f \text{Sinh}[d x] + 12 b d e f^2 \text{Sinh}[d x] + 12 b d e e^{2 c} f^2 \text{Sinh}[d x] + 12 b f^3 \text{Sinh}[d x] - 12 b e^{2 c} f^3 \text{Sinh}[d x] + 6 b d^3 e^2 f x \text{Sinh}[d x] + 6 b d^3 e^2 e^{2 c} f x \text{Sinh}[d x] + 12 b d^2 e f^2 x \text{Sinh}[d x] - 12 b d^2 e e^{2 c} f^2 x \text{Sinh}[d x] + 12 b d f^3 x \text{Sinh}[d x] + 12 b d e^{2 c} f^3 x \text{Sinh}[d x] + 6 b d^3 e f^2 x^2 \text{Sinh}[d x] + 6 b d^3 e e^{2 c} f^2 x^2 \text{Sinh}[d x] + 6 b d^2 f^3 x^2 \text{Sinh}[d x] - 6 b d^2 e^{2 c} f^3 x^2 \text{Sinh}[d x] + 2 b d^3 f^3 x^3 \text{Sinh}[d x] + 2 b d^3 e^{2 c} f^3 x^3 \text{Sinh}[d x]\Big)$$

Problem 334: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 330 leaves, 13 steps):

$$\frac{a (e+f x)^3}{3 b^2 f}-\frac{2 f (e+f x) \operatorname{Cosh}[c+d x]}{b d^2}-\frac{a (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 d}-\frac{a (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 d}-\frac{2 a f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 d^2}-\frac{2 a f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 d^2}+\frac{2 a f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 d^3}+\frac{2 a f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 d^3}+\frac{2 f^2 \operatorname{Sinh}[c+d x]}{b d^3}+\frac{(e+f x)^2 \operatorname{Sinh}[c+d x]}{b d}$$

Result (type 4, 869 leaves):

$$\frac{1}{6 b^2 d^3} e^{-c} \Bigg(6 a d^3 e^2 e^c x+6 a d^3 e e^c f x^2+2 a d^3 e^c f^2 x^3-3 b d^2 e^2 \operatorname{Cosh}[d x]+3 b d^2 e^2 e^{2 c} \operatorname{Cosh}[d x]-6 b d e f \operatorname{Cosh}[d x]-6 b d e e^{2 c} f \operatorname{Cosh}[d x]-6 b f^2 \operatorname{Cosh}[d x]+6 b e^{2 c} f^2 \operatorname{Cosh}[d x]-6 b d^2 e f x \operatorname{Cosh}[d x]+6 b d^2 e e^{2 c} f x \operatorname{Cosh}[d x]-6 b d f^2 x \operatorname{Cosh}[d x]-6 b d e^{2 c} f^2 x \operatorname{Cosh}[d x]-3 b d^2 f^2 x^2 \operatorname{Cosh}[d x]+3 b d^2 e^{2 c} f^2 x^2 \operatorname{Cosh}[d x]-6 a d^2 e^2 e^c \operatorname{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]-12 a d^2 e e^c f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 a d^2 e^c f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-12 a d^2 e e^c f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 a d^2 e^c f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-12 a d e^c f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-12 a d e^c f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+12 a e^c f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+12 a e^c f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+3 b d^2 e^2 \operatorname{Sinh}[d x]+3 b d^2 e^2 e^{2 c} \operatorname{Sinh}[d x]+6 b d e f \operatorname{Sinh}[d x]-6 b d e e^{2 c} f \operatorname{Sinh}[d x]+6 b f^2 \operatorname{Sinh}[d x]+6 b e^{2 c} f^2 \operatorname{Sinh}[d x]+6 b d^2 e f x \operatorname{Sinh}[d x]+6 b d^2 e e^{2 c} f x \operatorname{Sinh}[d x]+6 b d f^2 x \operatorname{Sinh}[d x]-6 b d e^{2 c} f^2 x \operatorname{Sinh}[d x]+3 b d^2 f^2 x^2 \operatorname{Sinh}[d x]+3 b d^2 e^{2 c} f^2 x^2 \operatorname{Sinh}[d x]\Bigg)$$

Problem 335: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(e+f x) \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{a+b \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 212 leaves, 10 steps):

$$\frac{a (e+f x)^2}{2 b^2 f}-\frac{f \text{Cosh}[c+d x]}{b d^2}-\frac{a (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 d}-\frac{a (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 d}-\frac{a f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 d^2}-\frac{a f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 d^2}+\frac{(e+f x) \text{Sinh}[c+d x]}{b d}$$

Result (type 4, 367 leaves):

$$\frac{1}{b^2 d^2}\left(-b f \text{Cosh}[c+d x]-a d e \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]+a c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]-\right.$$

$$a f \left(-\frac{1}{8} (2 c+i \pi+2 d x)^2-4 \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x+4 i \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x-4 i \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$\frac{1}{2} i \pi \text{Log}[a+b \text{Sinh}[c+d x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\left.\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right)+b d (e+f x) \text{Sinh}[c+d x]\right)$$

Problem 337: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d x] \text{Sinh}[c+d x]}{(e+f x) (a+b \text{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 35 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d x] \text{Sinh}[c+d x]}{(e+f x) (a+b \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 338: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{a+b \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 696 leaves, 23 steps):

$$\frac{3 e f^2 x}{4 b d^2}+\frac{3 f^3 x^2}{8 b d^2}+\frac{a^2 (e+f x)^4}{4 b^3 f}+\frac{(e+f x)^4}{8 b f}-$$
$$\frac{6 a f^2 (e+f x) \text{Cosh}[c+d x]}{b^2 d^3}-\frac{a (e+f x)^3 \text{Cosh}[c+d x]}{b^2 d}-\frac{3 f^3 \text{Cosh}[c+d x]^2}{8 b d^4}-$$
$$\frac{3 f (e+f x)^2 \text{Cosh}[c+d x]^2}{4 b d^2}-\frac{a \sqrt{a^2+b^2} (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d}+$$
$$\frac{a \sqrt{a^2+b^2} (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d}-\frac{3 a \sqrt{a^2+b^2} f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^2}+$$
$$\frac{3 a \sqrt{a^2+b^2} f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^2}+\frac{6 a \sqrt{a^2+b^2} f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^3}-$$
$$\frac{6 a \sqrt{a^2+b^2} f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^3}-\frac{6 a \sqrt{a^2+b^2} f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^4}+$$
$$\frac{6 a \sqrt{a^2+b^2} f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^4}+\frac{6 a f^3 \text{Sinh}[c+d x]}{b^2 d^4}+\frac{3 a f (e+f x)^2 \text{Sinh}[c+d x]}{b^2 d^2}+$$
$$\frac{3 f^2 (e+f x) \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b d^3}+\frac{(e+f x)^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 b d}$$

Result (type 4, 3334 leaves):

$$\frac{e^3\left(\frac{c}{d}+x-\frac{2\,a\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\;d}\right)}{4\,b}+$$

$$\frac{1}{8\,b}3\,e^2\,f\left(x^2+\frac{1}{d^2}2\,a\left(\frac{i\,\pi\,\text{ArcTanh}\left[\frac{-b+a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}}+\frac{1}{\sqrt{-a^2-b^2}}\right.\right.$$

$$\left(2\left(-i\,c+\text{ArcCos}\left[-\frac{i\,a}{b}\right]\right)\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]+\right.$$

$$\left(-2\,i\,c+\pi-2\,i\,d\,x\right)\text{ArcTanh}\left[\frac{(a-i\,b)\,\text{Tan}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

$$\left.\left(b\left(i\,a+b+i\sqrt{-a^2-b^2}\;\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right]-2\,i\,\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

$$\left.\left(b\left(a-i\,b+\sqrt{-a^2-b^2}\;\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]\right)\right)\right]+$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right]-2\,i\,\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]-2\,i\,\text{ArcTanh}\left[\right.\right.$$

$$\left.\left.\frac{(a-i\,b)\,\text{Tan}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]\right)\text{Log}\left[\frac{\sqrt{-a^2-b^2}\;e^{\frac{1}{4}(-2\,c-i\,\pi-2\,d\,x)}}{\sqrt{2}\;\sqrt{-i\,b}\;\sqrt{a+b\,\text{Sinh}[c+d\,x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]+\right.\right.$$

$$\left.\left.\text{ArcTanh}\left[\frac{(a-i\,b)\,\text{Tan}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]\right)\right)$$

$$\text{Log}\left[\frac{\sqrt{-a^2-b^2}\;e^{\frac{1}{4}(2\,c+i\,\pi+2\,d\,x)}}{\sqrt{2}\;\sqrt{-i\,b}\;\sqrt{a+b\,\text{Sinh}[c+d\,x]}}\right]+i\left(\text{PolyLog}\left[2,\right.\right.$$

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

$$\left(b\left(\mathrm{i}\,a+b+\mathrm{i}\sqrt{-a^2-b^2}\;\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]\right)\right)\Big]-\mathrm{PolyLog}\Big[2,$$

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

$$\left(b\left(\mathrm{i}\,a+b+\mathrm{i}\sqrt{-a^2-b^2}\;\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]\right)\right)\Big]\Big)\Bigg)\Bigg)\Bigg)+\frac{1}{4\,b}$$

$$e\,f^2\Bigg(x^3-\Bigg(3\,a\,e^c\Bigg(d^2x^2\,\mathrm{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-d^2x^2\,\mathrm{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]+$$

$$2\,d\,x\,\mathrm{PolyLog}\Big[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-$$

$$2\,d\,x\,\mathrm{PolyLog}\Big[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-$$

$$2\,\mathrm{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]+$$

$$2\,\mathrm{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]\Bigg)\Bigg)\Big/\left(d^3\sqrt{\left(a^2+b^2\right)e^{2\,c}}\right)\Bigg)+\frac{1}{16\,b}$$

$$f^3\Bigg(x^4-\Bigg(4\,a\,e^c\Bigg(d^3x^3\,\mathrm{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-d^3x^3\,\mathrm{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]+$$

$$3\,d^2x^2\,\mathrm{PolyLog}\Big[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-$$

$$3\,d^2x^2\,\mathrm{PolyLog}\Big[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-$$

$$6\,d\,x\,\mathrm{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]+$$

$$6\,d\,x\,\mathrm{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]+6\,\mathrm{PolyLog}\Big[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-$$

$$6\,\mathrm{PolyLog}\Big[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]\Bigg)\Bigg)\Big/\left(d^4\sqrt{\left(a^2+b^2\right)e^{2\,c}}\right)\Bigg)+$$

$$\frac{1}{8\,b^3}\,e\,f^2\Bigg(2\left(4\,a^2+b^2\right)x^3-\Bigg(6\,a\left(4\,a^2+3\,b^2\right)e^c\Bigg(d^2x^2\,\mathrm{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2\,c}}}\Big]-$$

$$d^2 x^2 \, \text{Log}\left[1+\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+2\, d\, x\, \text{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$2\, d\, x\, \text{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$2\, \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+2\, \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(d^3 \sqrt{\left(a^2+b^2\right) e^{2c}}\right)-\frac{24\, a\, b\, \text{Cosh}[d\, x]\, \left(\left(2+d^2 x^2\right) \text{Cosh}[c]-2\, d\, x\, \text{Sinh}[c]\right)}{d^3}+$$

$$\frac{3\, b^2\, \text{Cosh}[2\, d\, x]\, \left(-2\, d\, x\, \text{Cosh}[2\, c]+\left(1+2\, d^2 x^2\right) \text{Sinh}[2\, c]\right)}{d^3}-$$

$$\frac{24\, a\, b\, \left(-2\, d\, x\, \text{Cosh}[c]+\left(2+d^2 x^2\right) \text{Sinh}[c]\right) \text{Sinh}[d\, x]}{d^3}+$$

$$\left.\frac{3\, b^2\, \left(\left(1+2\, d^2 x^2\right) \text{Cosh}[2\, c]-2\, d\, x\, \text{Sinh}[2\, c]\right) \text{Sinh}[2\, d\, x]}{d^3}\right)+$$

$$\frac{1}{16\, b^3} f^3 \left(\left(4\, a^2+b^2\right) x^4-\frac{1}{d^4 \sqrt{\left(a^2+b^2\right) e^{2c}}} 4\, a\, \left(4\, a^2+3\, b^2\right) e^c\right.$$

$$\left(d^3 x^3 \, \text{Log}\left[1+\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-d^3 x^3 \, \text{Log}\left[1+\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+\right.$$

$$3\, d^2 x^2 \, \text{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-3\, d^2 x^2 \, \text{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$6\, d\, x\, \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+6\, d\, x\, \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$\left.6\, \text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-6\, \text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]\right)-$$

$$\frac{16\, a\, b\, \text{Cosh}[d\, x]\, \left(d\, x\, \left(6+d^2 x^2\right) \text{Cosh}[c]-3\, \left(2+d^2 x^2\right) \text{Sinh}[c]\right)}{d^4}+$$

$$\frac{1}{d^4}$$

$$b^2\, \text{Cosh}[2\, d\, x]$$

$$\left(-3\, \left(1+2\, d^2 x^2\right) \text{Cosh}[2\, c]+2\, d\, x\, \left(3+2\, d^2 x^2\right) \text{Sinh}[2\, c]\right)-$$

$$\frac{1}{d^4} 16\, a\, b\, \left(-3\, \left(2+d^2 x^2\right) \text{Cosh}[c]+d\, x\, \left(6+d^2 x^2\right) \text{Sinh}[c]\right)$$

$$\text{Sinh}[d\, x]+\frac{1}{d^4}$$

$$b^2\, \left(2\, d\, x\, \left(3+2\, d^2 x^2\right) \text{Cosh}[2\, c]-3\, \left(1+2\, d^2 x^2\right) \text{Sinh}[2\, c]\right)$$

$$\left.\text{Sinh}[2\,d\,x]\right)+\frac{1}{4\,b^3\,d}$$

$$e^3\left((4\,a^2+b^2)\,(c+d\,x)-\frac{2\,a\,(4\,a^2+3\,b^2)\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}-\right.$$

4

a

b

$\text{Cosh}[c+d\,x]+b^2$

$$\left.\text{Sinh}[2\,(c+d\,x)]\right)+$$

$$\frac{1}{8\,b^3\,d^2}3\,e^2\,f\left((4\,a^2+b^2)\,(-c+d\,x)\,(c+d\,x)-\right.$$

8

a

b

d

x

$\text{Cosh}[c+d\,x]-b^2$

$\text{Cosh}[2\,(c+d\,x)]-4$

a

$(4\,a^2+3\,b^2)$

$$\left(-\frac{c\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\sqrt{a^2+b^2}}\left((c+d\,x)\left(\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)+\right.\right.$$

$$\left.\left.\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+$$

$$\left.8\,a\,b\,\text{Sinh}[c+d\,x]+2\,b^2\,d\,x\,\text{Sinh}[2\,(c+d\,x)]\right)$$

Problem 339: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Cosh}[c+d x]^2 \operatorname{Sinh}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 510 leaves, 20 steps):

$$\frac{f^2 x}{4 b d^2}+\frac{a^2 (e+f x)^3}{3 b^3 f}+\frac{(e+f x)^3}{6 b f}-\frac{2 a f^2 \operatorname{Cosh}[c+d x]}{b^2 d^3}-\frac{a (e+f x)^2 \operatorname{Cosh}[c+d x]}{b^2 d}-\frac{f (e+f x) \operatorname{Cosh}[c+d x]^2}{2 b d^2}-\frac{a \sqrt{a^2+b^2} (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d}+\frac{a \sqrt{a^2+b^2} (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d}-\frac{2 a \sqrt{a^2+b^2} f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^2}+\frac{2 a \sqrt{a^2+b^2} f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^2}+\frac{2 a \sqrt{a^2+b^2} f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^3}-\frac{2 a \sqrt{a^2+b^2} f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^3}+\frac{2 a f (e+f x) \operatorname{Sinh}[c+d x]}{b^2 d^2}+\frac{f^2 \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{4 b d^3}+\frac{(e+f x)^2 \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{2 b d}$$

Result (type 4, 2327 leaves):

$$\frac{e^2 \left(\frac{c}{d}+x-\frac{2 a \operatorname{ArcTan}\left[\frac{b-a \operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\, d}\right)}{4 b}+$$

$$\frac{1}{4 b} e f \left(x^2+\frac{1}{d^2} 2 a \left(\frac{i \pi \operatorname{ArcTanh}\left[\frac{-b+a \operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}}+\frac{1}{\sqrt{-a^2-b^2}}\left(2 \left(-i c+\operatorname{ArcCos}\left[-\frac{i a}{b}\right]\right)\right.\right.\right.$$

$$\operatorname{ArcTanh}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]+(-2 i c+\pi-2 i d x)$$

$$\operatorname{ArcTanh}\left[\frac{(a-i b) \operatorname{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]-$$

$$\left(\operatorname{ArcCos}\left[-\frac{i a}{b}\right]+2 i \operatorname{ArcTanh}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

$$\operatorname{Log}\left[\left((i a+b)\left(a+i\left(b+\sqrt{-a^2-b^2}\right)\right)\left(-i+\operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\Big/\right.$$

$$\left.\left(b\left(i a+b+i \sqrt{-a^2-b^2} \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]-2 i \text{ArcTanh}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$
$$\text{Log}\left[\left((i a+b)\left(i a-b+\sqrt{-a^2-b^2}\right)\left(i+\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\Big/\right.$$
$$\left.\left(b\left(a-i b+\sqrt{-a^2-b^2}\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]+$$
$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]-2 i \text{ArcTanh}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]-2 i \text{ArcTanh}\left[\right.\right.$$
$$\left.\left.\frac{(a-i b) \text{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\text{Log}\left[\frac{\sqrt{-a^2-b^2}\, e^{\frac{1}{4}(-2 c-i \pi-2 d x)}}{\sqrt{2}\sqrt{-i b}\sqrt{a+b \text{Sinh}[c+d x]}}\right]+$$
$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]+2 i\left(\text{ArcTanh}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]+\right.\right.$$
$$\left.\left.\text{ArcTanh}\left[\frac{(a-i b) \text{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\right)$$
$$\text{Log}\left[\frac{\sqrt{-a^2-b^2}\, e^{\frac{1}{4}(2 c+i \pi+2 d x)}}{\sqrt{2}\sqrt{-i b}\sqrt{a+b \text{Sinh}[c+d x]}}\right]+i\left(\text{PolyLog}\left[2,\right.\right.$$
$$\left(\left(i a+\sqrt{-a^2-b^2}\right)\left(i a+b-i\sqrt{-a^2-b^2}\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\Big/$$
$$\left.\left(b\left(i a+b+i\sqrt{-a^2-b^2}\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]-\text{PolyLog}\left[2,\right.$$
$$\left(\left(a+i\sqrt{-a^2-b^2}\right)\left(-a+i b+\sqrt{-a^2-b^2}\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\Big/$$
$$\left.\left.\left.\left.\left(b\left(i a+b+i\sqrt{-a^2-b^2}\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]\right)\right)\right)+\frac{1}{12 b}$$

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

$$2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]\Bigg)\Bigg)\Bigg/\left(d^{3}\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}\right)\Bigg)+$$

$$\frac{1}{24\,b^{3}}f^{2}\left(2\left(4a^{2}+b^{2}\right)x^{3}-\left(6a\left(4a^{2}+3b^{2}\right)e^{c}\left(d^{2}x^{2}\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]-\right.\right.\right.$$

$$d^{2}x^{2}\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]+2\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]-$$

$$2\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]-$$

$$\left.\left.2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]+2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}}\right]\right)\right)\Bigg/$$

$$\left(d^{3}\sqrt{\left(a^{2}+b^{2}\right)e^{2c}}\right)-\frac{24\,a\,b\,\text{Cosh}[d\,x]\left(\left(2+d^{2}x^{2}\right)\text{Cosh}[c]-2\,d\,x\,\text{Sinh}[c]\right)}{d^{3}}+$$

$$\frac{3\,b^{2}\,\text{Cosh}[2\,d\,x]\left(-2\,d\,x\,\text{Cosh}[2\,c]+\left(1+2\,d^{2}x^{2}\right)\text{Sinh}[2\,c]\right)}{d^{3}}-$$

$$\frac{24\,a\,b\left(-2\,d\,x\,\text{Cosh}[c]+\left(2+d^{2}x^{2}\right)\text{Sinh}[c]\right)\text{Sinh}[d\,x]}{d^{3}}+$$

$$\left.\frac{3\,b^{2}\left(\left(1+2\,d^{2}x^{2}\right)\text{Cosh}[2\,c]-2\,d\,x\,\text{Sinh}[2\,c]\right)\text{Sinh}[2\,d\,x]}{d^{3}}\right)+$$

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

$$\frac{2\,a\left(4a^{2}+3b^{2}\right)\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^{2}-b^{2}}}\right]}{\sqrt{-a^{2}-b^{2}}}-$$

4
a
b
Cosh[
c + d x] +

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

$(-c + d x)$
$(c + d x) - 8$
a

b
d
x
$\text{Cosh}[c+d\,x]-b^2$
$\text{Cosh}[2\,(c+d\,x)]-4$
a
$(4\,a^2+3\,b^2)$

$$\left(-\frac{c\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\,\sqrt{a^2+b^2}}\right.$$
$$\left((c+d\,x)\left(\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)+\right.$$
$$\left.\left.\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+$$
$$\left.8\,a\,b\,\text{Sinh}[c+d\,x]+2\,b^2\,d\,x\,\text{Sinh}[2\,(c+d\,x)]\right)$$

Problem 340: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 327 leaves, 15 steps):

$$\frac{a^2\,e\,x}{b^3}+\frac{e\,x}{2\,b}+\frac{a^2\,f\,x^2}{2\,b^3}+\frac{f\,x^2}{4\,b}-\frac{a\,(e+f\,x)\,\text{Cosh}[c+d\,x]}{b^2\,d}-\frac{f\,\text{Cosh}[c+d\,x]^2}{4\,b\,d^2}-$$
$$\frac{a\,\sqrt{a^2+b^2}\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d}+\frac{a\,\sqrt{a^2+b^2}\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d}-$$
$$\frac{a\,\sqrt{a^2+b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d^2}+\frac{a\,\sqrt{a^2+b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d^2}+$$
$$\frac{a\,f\,\text{Sinh}[c+d\,x]}{b^2\,d^2}+\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{2\,b\,d}$$

Result (type 4, 1549 leaves):

$$\frac{e\left(\frac{c}{d}+x-\frac{2\,a\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\,d}\right)}{4\,b}+$$

$$\frac{1}{8\,b} f \left(x^2 + \frac{1}{d^2} 2\,a \left(\frac{i\,\pi\,\text{ArcTanh}\left[\frac{-b+a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}} + \frac{1}{\sqrt{-a^2-b^2}} \left(2\left(-i\,c + \text{ArcCos}\left[-\frac{i\,a}{b}\right]\right) \right.\right.\right.$$

$$\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right] + (-2\,i\,c+\pi-2\,i\,d\,x)$$

$$\text{ArcTanh}\left[\frac{(a-i\,b)\,\text{Tan}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right] -$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right] + 2\,i\,\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

$$\left.\left(b\left(i\,a+b+i\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]\right)\right)\right] -$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right] - 2\,i\,\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

$$\left.\left(b\left(a-i\,b+\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]\right)\right)\right] +$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right] - 2\,i\,\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right] - 2\,i\,\text{ArcTanh}\left[\right.\right.$$

$$\left.\left.\frac{(a-i\,b)\,\text{Tan}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\text{Log}\left[\frac{\sqrt{-a^2-b^2}\,e^{\frac{1}{4}(-2\,c-i\,\pi-2\,d\,x)}}{\sqrt{2}\,\sqrt{-i\,b}\,\sqrt{a+b\,\text{Sinh}[c+d\,x]}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{i\,a}{b}\right] + 2\,i\left(\text{ArcTanh}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right] +\right.\right.$$

$$\left.\left.\text{ArcTanh}\left[\frac{(a-i\,b)\,\text{Tan}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\right)$$

$$\text{Log}\left[\frac{\sqrt{-a^2-b^2}\,e^{\frac{1}{4}(2\,c+i\,\pi+2\,d\,x)}}{\sqrt{2}\,\sqrt{-i\,b}\,\sqrt{a+b\,\text{Sinh}[c+d\,x]}}\right] + i\left(\text{PolyLog}\left[2,\right.\right.$$

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

$$\left.\left(b\left(i\,a+b+i\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2\,i\,c+\pi+2\,i\,d\,x)\right]\right)\right)\right] - \text{PolyLog}\left[2,\right.$$

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

$$\left(b\left(\mathrm{i}\,a+b+\mathrm{i}\sqrt{-a^2-b^2}\,\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]\right)\right]\right)\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{4\,b^3\,d}e\left(\left(4\,a^2+b^2\right)\left(c+d\,x\right)-\frac{2\,a\left(4\,a^2+3\,b^2\right)\mathrm{ArcTan}\left[\frac{b-a\,\mathrm{Tanh}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}-\right.$$

$$4\,a\,b\,\mathrm{Cosh}\left[c+d\,x\right]+$$

$$\left.b^2\,\mathrm{Sinh}\left[2\left(c+d\,x\right)\right]\right)+\frac{1}{8\,b^3\,d^2}f\left(\left(4\,a^2+b^2\right)\right.$$

$$\left(-c+d\,x\right)\left(c+d\,x\right)-$$

$$8\,a\,b\,d\,x\,\mathrm{Cosh}\left[c+d\,x\right]-$$

$$b^2\,\mathrm{Cosh}\left[2\left(c+d\,x\right)\right]-4\,a\left(4\,a^2+3\,b^2\right)$$

$$\left(-\frac{c\,\mathrm{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\sqrt{a^2+b^2}}\right.$$

$$\left(\left(c+d\,x\right)\left(\mathrm{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)+\right.$$

$$\left.\left.\mathrm{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\mathrm{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+$$

$$\left.8\,a\,b\,\mathrm{Sinh}\left[c+d\,x\right]+2\,b^2\,d\,x\,\mathrm{Sinh}\left[2\left(c+d\,x\right)\right]\right)$$

Problem 342: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d x]^2 \,\text{Sinh}[c+d x]}{(e+f x)\,(a+b\,\text{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d x]^2 \,\text{Sinh}[c+d x]}{(e+f x)\,(a+b\,\text{Sinh}[c+d x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 343: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3\,\text{Cosh}[c+d x]^3 \,\text{Sinh}[c+d x]}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 864 leaves, 30 steps):

$$-\frac{3 a f^3 x}{8 b^2 d^3}-\frac{a (e+f x)^3}{4 b^2 d}+\frac{a (a^2+b^2) (e+f x)^4}{4 b^4 f}-\frac{6 a^2 f^3 \text{Cosh}[c+d x]}{b^3 d^4}-$$
$$\frac{40 f^3 \text{Cosh}[c+d x]}{9 b d^4}-\frac{3 a^2 f (e+f x)^2 \text{Cosh}[c+d x]}{b^3 d^2}-\frac{2 f (e+f x)^2 \text{Cosh}[c+d x]}{b d^2}-$$
$$\frac{2 f^3 \text{Cosh}[c+d x]^3}{27 b d^4}-\frac{f (e+f x)^2 \text{Cosh}[c+d x]^3}{3 b d^2}-\frac{a (a^2+b^2) (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d}-$$
$$\frac{a (a^2+b^2) (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{3 a (a^2+b^2) f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^2}-$$
$$\frac{3 a (a^2+b^2) f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^2}+\frac{6 a (a^2+b^2) f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^3}+$$
$$\frac{6 a (a^2+b^2) f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^3}-\frac{6 a (a^2+b^2) f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^4}-$$
$$\frac{6 a (a^2+b^2) f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^4}+\frac{6 a^2 f^2 (e+f x) \text{Sinh}[c+d x]}{b^3 d^3}+$$
$$\frac{40 f^2 (e+f x) \text{Sinh}[c+d x]}{9 b d^3}+\frac{a^2 (e+f x)^3 \text{Sinh}[c+d x]}{b^3 d}+\frac{2 (e+f x)^3 \text{Sinh}[c+d x]}{3 b d}+$$
$$\frac{3 a f^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{8 b^2 d^4}+\frac{3 a f (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b^2 d^2}+$$
$$\frac{2 f^2 (e+f x) \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{9 b d^3}+\frac{(e+f x)^3 \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{3 b d}-$$
$$\frac{3 a f^2 (e+f x) \text{Sinh}[c+d x]^2}{4 b^2 d^3}-\frac{a (e+f x)^3 \text{Sinh}[c+d x]^2}{2 b^2 d}$$

Result (type 4, 5721 leaves):

$$\frac{1}{4 b^2 d^3}$$
$$e f^2 \left(-12 a d x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-12 a d x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]+\right.$$
$$e^{-c} \left(2 a d^3 e^c x^3-6 b \text{Cosh}[d x]+6 b e^{2 c} \text{Cosh}[d x]-6 b d x \text{Cosh}[d x]-6 b d e^{2 c} x \text{Cosh}[d x]-\right.$$
$$3 b d^2 x^2 \text{Cosh}[d x]+3 b d^2 e^{2 c} x^2 \text{Cosh}[d x]-6 a d^2 e^c x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]-$$
$$6 a d^2 e^c x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{(a^2+b^2) e^{2 c}}}\right]+12 a e^c \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{(a^2+b^2) e^{2 c}}}\right]+$$

$$12\,a\,e^c\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+6\,b\,\text{Sinh}[d\,x]+6\,b\,e^{2c}\,\text{Sinh}[d\,x]+$$

$$6\,b\,d\,x\,\text{Sinh}[d\,x]-6\,b\,d\,e^{2c}\,x\,\text{Sinh}[d\,x]+3\,b\,d^2\,x^2\,\text{Sinh}[d\,x]+3\,b\,d^2\,e^{2c}\,x^2\,\text{Sinh}[d\,x]\Bigg)\Bigg)+$$

$$\frac{1}{8\,b^2\,d^4}\,f^3\left(-12\,a\,d^2\,x^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+\right.$$

$$e^{-c}\Bigg(a\,d^4\,e^c\,x^4-12\,b\,\text{Cosh}[d\,x]-12\,b\,e^{2c}\,\text{Cosh}[d\,x]-12\,b\,d\,x\,\text{Cosh}[d\,x]+12\,b\,d\,e^{2c}\,x\,\text{Cosh}[d\,x]-$$

$$6\,b\,d^2\,x^2\,\text{Cosh}[d\,x]-6\,b\,d^2\,e^{2c}\,x^2\,\text{Cosh}[d\,x]-2\,b\,d^3\,x^3\,\text{Cosh}[d\,x]+2\,b\,d^3\,e^{2c}\,x^3\,\text{Cosh}[d\,x]-$$

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

$$12\,a\,d^2\,e^c\,x^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+24\,a\,d\,e^c\,x$$

$$\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+24\,a\,d\,e^c\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$24\,a\,e^c\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-24\,a\,e^c\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$12\,b\,\text{Sinh}[d\,x]-12\,b\,e^{2c}\,\text{Sinh}[d\,x]+12\,b\,d\,x\,\text{Sinh}[d\,x]+12\,b\,d\,e^{2c}\,x\,\text{Sinh}[d\,x]+$$

$$6\,b\,d^2\,x^2\,\text{Sinh}[d\,x]-6\,b\,d^2\,e^{2c}\,x^2\,\text{Sinh}[d\,x]+2\,b\,d^3\,x^3\,\text{Sinh}[d\,x]+2\,b\,d^3\,e^{2c}\,x^3\,\text{Sinh}[d\,x]\Bigg)\Bigg)+$$

$$\frac{1}{144\,b^4\,d^3}\,e\,e^{-3c}\,f^2\Big(144\,a^3\,d^3\,e^{3c}\,x^3+72\,a\,b^2\,d^3\,e^{3c}\,x^3-432\,a^2\,b\,e^{2c}\,\text{Cosh}[d\,x]-$$

$$108\,b^3\,e^{2c}\,\text{Cosh}[d\,x]+432\,a^2\,b\,e^{4c}\,\text{Cosh}[d\,x]+108\,b^3\,e^{4c}\,\text{Cosh}[d\,x]-$$
$$432\,a^2\,b\,d\,e^{2c}\,x\,\text{Cosh}[d\,x]-108\,b^3\,d\,e^{2c}\,x\,\text{Cosh}[d\,x]-432\,a^2\,b\,d\,e^{4c}\,x\,\text{Cosh}[d\,x]-$$
$$108\,b^3\,d\,e^{4c}\,x\,\text{Cosh}[d\,x]-216\,a^2\,b\,d^2\,e^{2c}\,x^2\,\text{Cosh}[d\,x]-$$
$$54\,b^3\,d^2\,e^{2c}\,x^2\,\text{Cosh}[d\,x]+216\,a^2\,b\,d^2\,e^{4c}\,x^2\,\text{Cosh}[d\,x]+54\,b^3\,d^2\,e^{4c}\,x^2\,\text{Cosh}[d\,x]-$$
$$27\,a\,b^2\,e^c\,\text{Cosh}[2\,d\,x]-27\,a\,b^2\,e^{5c}\,\text{Cosh}[2\,d\,x]-54\,a\,b^2\,d\,e^c\,x\,\text{Cosh}[2\,d\,x]+$$
$$54\,a\,b^2\,d\,e^{5c}\,x\,\text{Cosh}[2\,d\,x]-54\,a\,b^2\,d^2\,e^c\,x^2\,\text{Cosh}[2\,d\,x]-$$
$$54\,a\,b^2\,d^2\,e^{5c}\,x^2\,\text{Cosh}[2\,d\,x]-4\,b^3\,\text{Cosh}[3\,d\,x]+4\,b^3\,e^{6c}\,\text{Cosh}[3\,d\,x]-$$
$$12\,b^3\,d\,x\,\text{Cosh}[3\,d\,x]-12\,b^3\,d\,e^{6c}\,x\,\text{Cosh}[3\,d\,x]-18\,b^3\,d^2\,x^2\,\text{Cosh}[3\,d\,x]+$$

$$18\,b^3\,d^2\,e^{6c}\,x^2\,\text{Cosh}[3\,d\,x]-432\,a^3\,d^2\,e^{3c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$216\,a\,b^2\,d^2\,e^{3c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$432\,a^3\,d^2\,e^{3\,c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$216\,a\,b^2\,d^2\,e^{3\,c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$432\,a\,\left(2\,a^2+b^2\right)\,d\,e^{3\,c}\,x\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$432\,a\,\left(2\,a^2+b^2\right)\,d\,e^{3\,c}\,x\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$864\,a^3\,e^{3\,c}\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$432\,a\,b^2\,e^{3\,c}\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$864\,a^3\,e^{3\,c}\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$432\,a\,b^2\,e^{3\,c}\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+432\,a^2\,b\,e^{2\,c}\,\text{Sinh}[d\,x]+$$

$$108\,b^3\,e^{2\,c}\,\text{Sinh}[d\,x]+432\,a^2\,b\,e^{4\,c}\,\text{Sinh}[d\,x]+108\,b^3\,e^{4\,c}\,\text{Sinh}[d\,x]+432\,a^2\,b\,d\,e^{2\,c}\,x\,\text{Sinh}[d\,x]+$$
$$108\,b^3\,d\,e^{2\,c}\,x\,\text{Sinh}[d\,x]-432\,a^2\,b\,d\,e^{4\,c}\,x\,\text{Sinh}[d\,x]-108\,b^3\,d\,e^{4\,c}\,x\,\text{Sinh}[d\,x]+$$
$$216\,a^2\,b\,d^2\,e^{2\,c}\,x^2\,\text{Sinh}[d\,x]+54\,b^3\,d^2\,e^{2\,c}\,x^2\,\text{Sinh}[d\,x]+216\,a^2\,b\,d^2\,e^{4\,c}\,x^2\,\text{Sinh}[d\,x]+$$
$$54\,b^3\,d^2\,e^{4\,c}\,x^2\,\text{Sinh}[d\,x]+27\,a\,b^2\,e^c\,\text{Sinh}[2\,d\,x]-27\,a\,b^2\,e^{5\,c}\,\text{Sinh}[2\,d\,x]+$$
$$54\,a\,b^2\,d\,e^c\,x\,\text{Sinh}[2\,d\,x]+54\,a\,b^2\,d\,e^{5\,c}\,x\,\text{Sinh}[2\,d\,x]+54\,a\,b^2\,d^2\,e^c\,x^2\,\text{Sinh}[2\,d\,x]-$$
$$54\,a\,b^2\,d^2\,e^{5\,c}\,x^2\,\text{Sinh}[2\,d\,x]+4\,b^3\,\text{Sinh}[3\,d\,x]+4\,b^3\,e^{6\,c}\,\text{Sinh}[3\,d\,x]+12\,b^3\,d\,x\,\text{Sinh}[3\,d\,x]-$$
$$\left.12\,b^3\,d\,e^{6\,c}\,x\,\text{Sinh}[3\,d\,x]+18\,b^3\,d^2\,x^2\,\text{Sinh}[3\,d\,x]+18\,b^3\,d^2\,e^{6\,c}\,x^2\,\text{Sinh}[3\,d\,x]\right)+$$

$$\frac{1}{864\,b^4\,d^4}\,e^{-3\,c}\,f^3\,\left(216\,a^3\,d^4\,e^{3\,c}\,x^4+108\,a\,b^2\,d^4\,e^{3\,c}\,x^4-2592\,a^2\,b\,e^{2\,c}\,\text{Cosh}[d\,x]-\right.$$

$$648\,b^3\,e^{2\,c}\,\text{Cosh}[d\,x]-2592\,a^2\,b\,e^{4\,c}\,\text{Cosh}[d\,x]-648\,b^3\,e^{4\,c}\,\text{Cosh}[d\,x]-$$
$$2592\,a^2\,b\,d\,e^{2\,c}\,x\,\text{Cosh}[d\,x]-648\,b^3\,d\,e^{2\,c}\,x\,\text{Cosh}[d\,x]+2592\,a^2\,b\,d\,e^{4\,c}\,x\,\text{Cosh}[d\,x]+$$
$$648\,b^3\,d\,e^{4\,c}\,x\,\text{Cosh}[d\,x]-1296\,a^2\,b\,d^2\,e^{2\,c}\,x^2\,\text{Cosh}[d\,x]-324\,b^3\,d^2\,e^{2\,c}\,x^2\,\text{Cosh}[d\,x]-$$
$$1296\,a^2\,b\,d^2\,e^{4\,c}\,x^2\,\text{Cosh}[d\,x]-324\,b^3\,d^2\,e^{4\,c}\,x^2\,\text{Cosh}[d\,x]-432\,a^2\,b\,d^3\,e^{2\,c}\,x^3\,\text{Cosh}[d\,x]-$$
$$108\,b^3\,d^3\,e^{2\,c}\,x^3\,\text{Cosh}[d\,x]+432\,a^2\,b\,d^3\,e^{4\,c}\,x^3\,\text{Cosh}[d\,x]+108\,b^3\,d^3\,e^{4\,c}\,x^3\,\text{Cosh}[d\,x]-$$
$$81\,a\,b^2\,e^c\,\text{Cosh}[2\,d\,x]+81\,a\,b^2\,e^{5\,c}\,\text{Cosh}[2\,d\,x]-162\,a\,b^2\,d\,e^c\,x\,\text{Cosh}[2\,d\,x]-$$
$$162\,a\,b^2\,d\,e^{5\,c}\,x\,\text{Cosh}[2\,d\,x]-162\,a\,b^2\,d^2\,e^c\,x^2\,\text{Cosh}[2\,d\,x]+162\,a\,b^2\,d^2\,e^{5\,c}\,x^2\,\text{Cosh}[2\,d\,x]-$$
$$108\,a\,b^2\,d^3\,e^c\,x^3\,\text{Cosh}[2\,d\,x]-108\,a\,b^2\,d^3\,e^{5\,c}\,x^3\,\text{Cosh}[2\,d\,x]-8\,b^3\,\text{Cosh}[3\,d\,x]-$$
$$8\,b^3\,e^{6\,c}\,\text{Cosh}[3\,d\,x]-24\,b^3\,d\,x\,\text{Cosh}[3\,d\,x]+24\,b^3\,d\,e^{6\,c}\,x\,\text{Cosh}[3\,d\,x]-$$
$$36\,b^3\,d^2\,x^2\,\text{Cosh}[3\,d\,x]-36\,b^3\,d^2\,e^{6\,c}\,x^2\,\text{Cosh}[3\,d\,x]-36\,b^3\,d^3\,x^3\,\text{Cosh}[3\,d\,x]+$$

$$36\,b^3\,d^3\,e^{6\,c}\,x^3\,\text{Cosh}[3\,d\,x]-864\,a^3\,d^3\,e^{3\,c}\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$432\,a\,b^2\,d^3\,e^{3c}\,x^3\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-864\,a^3\,d^3\,e^{3c}\,x^3$$

$$\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-432\,a\,b^2\,d^3\,e^{3c}\,x^3\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$1296\,a\,(2\,a^2+b^2)\,d^2\,e^{3c}\,x^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$1296\,a\,(2\,a^2+b^2)\,d^2\,e^{3c}\,x^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$5184\,a^3\,d\,e^{3c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$2592\,a\,b^2\,d\,e^{3c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$5184\,a^3\,d\,e^{3c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$2592\,a\,b^2\,d\,e^{3c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$5184\,a^3\,e^{3c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$2592\,a\,b^2\,e^{3c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$5184\,a^3\,e^{3c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$2592\,a\,b^2\,e^{3c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+2592\,a^2\,b\,e^{2c}\,\text{Sinh}[d\,x]+$$

$$648\,b^3\,e^{2c}\,\text{Sinh}[d\,x]-2592\,a^2\,b\,e^{4c}\,\text{Sinh}[d\,x]-648\,b^3\,e^{4c}\,\text{Sinh}[d\,x]+$$
$$2592\,a^2\,b\,d\,e^{2c}\,x\,\text{Sinh}[d\,x]+648\,b^3\,d\,e^{2c}\,x\,\text{Sinh}[d\,x]+2592\,a^2\,b\,d\,e^{4c}\,x\,\text{Sinh}[d\,x]+$$
$$648\,b^3\,d\,e^{4c}\,x\,\text{Sinh}[d\,x]+1296\,a^2\,b\,d^2\,e^{2c}\,x^2\,\text{Sinh}[d\,x]+324\,b^3\,d^2\,e^{2c}\,x^2\,\text{Sinh}[d\,x]-$$
$$1296\,a^2\,b\,d^2\,e^{4c}\,x^2\,\text{Sinh}[d\,x]-324\,b^3\,d^2\,e^{4c}\,x^2\,\text{Sinh}[d\,x]+432\,a^2\,b\,d^3\,e^{2c}\,x^3\,\text{Sinh}[d\,x]+$$
$$108\,b^3\,d^3\,e^{2c}\,x^3\,\text{Sinh}[d\,x]+432\,a^2\,b\,d^3\,e^{4c}\,x^3\,\text{Sinh}[d\,x]+108\,b^3\,d^3\,e^{4c}\,x^3\,\text{Sinh}[d\,x]+$$
$$81\,a\,b^2\,e^{c}\,\text{Sinh}[2\,d\,x]+81\,a\,b^2\,e^{5c}\,\text{Sinh}[2\,d\,x]+162\,a\,b^2\,d\,e^{c}\,x\,\text{Sinh}[2\,d\,x]-$$
$$162\,a\,b^2\,d\,e^{5c}\,x\,\text{Sinh}[2\,d\,x]+162\,a\,b^2\,d^2\,e^{c}\,x^2\,\text{Sinh}[2\,d\,x]+162\,a\,b^2\,d^2\,e^{5c}\,x^2\,\text{Sinh}[2\,d\,x]+$$
$$108\,a\,b^2\,d^3\,e^{c}\,x^3\,\text{Sinh}[2\,d\,x]-108\,a\,b^2\,d^3\,e^{5c}\,x^3\,\text{Sinh}[2\,d\,x]+8\,b^3\,\text{Sinh}[3\,d\,x]-$$
$$8\,b^3\,e^{6c}\,\text{Sinh}[3\,d\,x]+24\,b^3\,d\,x\,\text{Sinh}[3\,d\,x]+24\,b^3\,d\,e^{6c}\,x\,\text{Sinh}[3\,d\,x]+36\,b^3\,d^2\,x^2\,\text{Sinh}[3\,d\,x]-$$

$$\left.36\,b^3\,d^2\,e^{6c}\,x^2\,\text{Sinh}[3\,d\,x]+36\,b^3\,d^3\,x^3\,\text{Sinh}[3\,d\,x]+36\,b^3\,d^3\,e^{6c}\,x^3\,\text{Sinh}[3\,d\,x]\right)+$$

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

$$\frac{1}{2 b^2 d^2} 3 e^2 f \left(-b \text{Cosh}[c + d x] - a (c + d x) \text{Log}[a + b \text{Sinh}[c + d x]] + \right.$$

$$a c \text{Log}\left[1 + \frac{b \text{Sinh}[c + d x]}{a}\right] + i a \left(-\frac{1}{8} i (2 c + i \pi + 2 d x)^2 - \right.$$

$$4 i \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a + i b) \text{Cot}\left[\frac{1}{4} (2 i c + \pi + 2 i d x)\right]}{\sqrt{a^2 + b^2}}\right] -$$

$$\frac{1}{2} \left(-2 i c + \pi - 2 i d x + 4 \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1 + \frac{\left(-a + \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right] -$$

$$\frac{1}{2} \left(-2 i c + \pi - 2 i d x - 4 \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1 - \frac{\left(a + \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right] +$$

$$\left(\frac{\pi}{2} - i (c + d x)\right) \text{Log}[a + b \text{Sinh}[c + d x]] + i \left(\text{PolyLog}\left[2, \frac{\left(a - \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right] + \right.$$

$$\left.\left.\left.\text{PolyLog}\left[2, \frac{\left(a + \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right]\right)\right) + b d x \text{Sinh}[c + d x]\right) +$$

$$\frac{1}{8} e^3 \left(-\frac{2 a \text{Cosh}[2 (c + d x)]}{b^2 d} - \frac{4 (2 a^3 + a b^2) \text{Log}[a + b \text{Sinh}[c + d x]]}{b^4 d} + \right.$$

$$\left.\frac{2 (4 a^2 + b^2) \text{Sinh}[c + d x]}{b^3 d} + \frac{2 \text{Sinh}[3 (c + d x)]}{3 b d}\right) +$$

$$\frac{1}{24 b^4 d^2} e^2 f \left(-18 b \left(4 a^2+b^2\right) \text{Cosh}[c+d x]-18 a b^2 d x \text{Cosh}[2 (c+d x)]-2 b^3 \text{Cosh}[3 (c+d x)]+\right.$$

$$72 a^3 c \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]+36 a b^2 c \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]-72 a^3$$

$$\left(-\frac{1}{8} (2 c+i \pi+2 d x)^2-4 \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x+4 i \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x-4 i \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$\frac{1}{2} i \pi \text{Log}[a+b \text{Sinh}[c+d x]]+\text{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right)-36 a b^2$$

$$\left(-\frac{1}{8} (2 c+i \pi+2 d x)^2-4 \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x+4 i \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]\right)+$$

$$\left.18\,b\,\left(4\,a^2+b^2\right)\,d\,x\,\text{Sinh}[c+d\,x]+9\,a\,b^2\,\text{Sinh}[2\,(c+d\,x)]+6\,b^3\,d\,x\,\text{Sinh}[3\,(c+d\,x)]\right)$$

Problem 344: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^2\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 636 leaves, 23 steps):

$$-\frac{a e f x}{2 b^2 d}-\frac{a f^2 x^2}{4 b^2 d}+\frac{a\left(a^2+b^2\right)(e+f x)^3}{3 b^4 f}-\frac{2 a^2 f(e+f x) \operatorname{Cosh}[c+d x]}{b^3 d^2}-$$

$$\frac{4 f(e+f x) \operatorname{Cosh}[c+d x]}{3 b d^2}-\frac{2 f(e+f x) \operatorname{Cosh}[c+d x]^3}{9 b d^2}-\frac{a\left(a^2+b^2\right)(e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d}-$$

$$\frac{a\left(a^2+b^2\right)(e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{2 a\left(a^2+b^2\right) f(e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^2}-$$

$$\frac{2 a\left(a^2+b^2\right) f(e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^2}+\frac{2 a\left(a^2+b^2\right) f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^3}+$$

$$\frac{2 a\left(a^2+b^2\right) f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^3}+\frac{2 a^2 f^2 \operatorname{Sinh}[c+d x]}{b^3 d^3}+$$

$$\frac{14 f^2 \operatorname{Sinh}[c+d x]}{9 b d^3}+\frac{a^2(e+f x)^2 \operatorname{Sinh}[c+d x]}{b^3 d}+\frac{2(e+f x)^2 \operatorname{Sinh}[c+d x]}{3 b d}+$$

$$\frac{a f(e+f x) \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{2 b^2 d^2}+\frac{(e+f x)^2 \operatorname{Cosh}[c+d x]^2 \operatorname{Sinh}[c+d x]}{3 b d}-$$

$$\frac{a f^2 \operatorname{Sinh}[c+d x]^2}{4 b^2 d^3}-\frac{a(e+f x)^2 \operatorname{Sinh}[c+d x]^2}{2 b^2 d}+\frac{2 f^2 \operatorname{Sinh}[c+d x]^3}{27 b d^3}$$

Result (type 4, 3135 leaves):

$$\frac{1}{12 b^2 d^3}$$

$$f^2\left(-12 a d x \operatorname{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-12 a d x \operatorname{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+\right.$$

$$e^{-c}\left(2 a d^3 e^c x^3-6 b \operatorname{Cosh}[d x]+6 b e^{2 c} \operatorname{Cosh}[d x]-6 b d x \operatorname{Cosh}[d x]-6 b d e^{2 c} x \operatorname{Cosh}[d x]-\right.$$

$$3 b d^2 x^2 \operatorname{Cosh}[d x]+3 b d^2 e^{2 c} x^2 \operatorname{Cosh}[d x]-6 a d^2 e^c x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$

$$6 a d^2 e^c x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+12 a e^c \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$

$$12 a e^c \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 b \operatorname{Sinh}[d x]+6 b e^{2 c} \operatorname{Sinh}[d x]+$$

$$\left.\left.6 b d x \operatorname{Sinh}[d x]-6 b d e^{2 c} x \operatorname{Sinh}[d x]+3 b d^2 x^2 \operatorname{Sinh}[d x]+3 b d^2 e^{2 c} x^2 \operatorname{Sinh}[d x]\right)\right)+$$

$$\frac{1}{432 b^4 d^3} e^{-3 c} f^2\left(144 a^3 d^3 e^{3 c} x^3+72 a b^2 d^3 e^{3 c} x^3-432 a^2 b e^{2 c} \operatorname{Cosh}[d x]-\right.$$

$108\, b^3\, e^{2c}\, \text{Cosh}[d\, x] + 432\, a^2\, b\, e^{4c}\, \text{Cosh}[d\, x] + 108\, b^3\, e^{4c}\, \text{Cosh}[d\, x] -$
$432\, a^2\, b\, d\, e^{2c}\, x\, \text{Cosh}[d\, x] - 108\, b^3\, d\, e^{2c}\, x\, \text{Cosh}[d\, x] - 432\, a^2\, b\, d\, e^{4c}\, x\, \text{Cosh}[d\, x] -$
$108\, b^3\, d\, e^{4c}\, x\, \text{Cosh}[d\, x] - 216\, a^2\, b\, d^2\, e^{2c}\, x^2\, \text{Cosh}[d\, x] - 54\, b^3\, d^2\, e^{2c}\, x^2\, \text{Cosh}[d\, x] +$
$216\, a^2\, b\, d^2\, e^{4c}\, x^2\, \text{Cosh}[d\, x] + 54\, b^3\, d^2\, e^{4c}\, x^2\, \text{Cosh}[d\, x] - 27\, a\, b^2\, e^{c}\, \text{Cosh}[2\, d\, x] -$
$27\, a\, b^2\, e^{5c}\, \text{Cosh}[2\, d\, x] - 54\, a\, b^2\, d\, e^{c}\, x\, \text{Cosh}[2\, d\, x] + 54\, a\, b^2\, d\, e^{5c}\, x\, \text{Cosh}[2\, d\, x] -$
$54\, a\, b^2\, d^2\, e^{c}\, x^2\, \text{Cosh}[2\, d\, x] - 54\, a\, b^2\, d^2\, e^{5c}\, x^2\, \text{Cosh}[2\, d\, x] - 4\, b^3\, \text{Cosh}[3\, d\, x] +$
$4\, b^3\, e^{6c}\, \text{Cosh}[3\, d\, x] - 12\, b^3\, d\, x\, \text{Cosh}[3\, d\, x] - 12\, b^3\, d\, e^{6c}\, x\, \text{Cosh}[3\, d\, x] - 18\, b^3\, d^2\, x^2\, \text{Cosh}[3\, d\, x] +$
$18\, b^3\, d^2\, e^{6c}\, x^2\, \text{Cosh}[3\, d\, x] - 432\, a^3\, d^2\, e^{3c}\, x^2\, \text{Log}\left[1 + \frac{b\, e^{2c+d\, x}}{a\, e^{c} - \sqrt{(a^2+b^2)\, e^{2c}}}\right] -$
$216\, a\, b^2\, d^2\, e^{3c}\, x^2\, \text{Log}\left[1 + \frac{b\, e^{2c+d\, x}}{a\, e^{c} - \sqrt{(a^2+b^2)\, e^{2c}}}\right] - 432\, a^3\, d^2\, e^{3c}\, x^2$
$\text{Log}\left[1 + \frac{b\, e^{2c+d\, x}}{a\, e^{c} + \sqrt{(a^2+b^2)\, e^{2c}}}\right] - 216\, a\, b^2\, d^2\, e^{3c}\, x^2\, \text{Log}\left[1 + \frac{b\, e^{2c+d\, x}}{a\, e^{c} + \sqrt{(a^2+b^2)\, e^{2c}}}\right] -$
$432\, a\, (2\, a^2 + b^2)\, d\, e^{3c}\, x\, \text{PolyLog}\left[2, -\frac{b\, e^{2c+d\, x}}{a\, e^{c} - \sqrt{(a^2+b^2)\, e^{2c}}}\right] -$
$432\, a\, (2\, a^2 + b^2)\, d\, e^{3c}\, x\, \text{PolyLog}\left[2, -\frac{b\, e^{2c+d\, x}}{a\, e^{c} + \sqrt{(a^2+b^2)\, e^{2c}}}\right] +$
$864\, a^3\, e^{3c}\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+d\, x}}{a\, e^{c} - \sqrt{(a^2+b^2)\, e^{2c}}}\right] +$
$432\, a\, b^2\, e^{3c}\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+d\, x}}{a\, e^{c} - \sqrt{(a^2+b^2)\, e^{2c}}}\right] +$
$864\, a^3\, e^{3c}\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+d\, x}}{a\, e^{c} + \sqrt{(a^2+b^2)\, e^{2c}}}\right] +$
$432\, a\, b^2\, e^{3c}\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+d\, x}}{a\, e^{c} + \sqrt{(a^2+b^2)\, e^{2c}}}\right] + 432\, a^2\, b\, e^{2c}\, \text{Sinh}[d\, x] +$
$108\, b^3\, e^{2c}\, \text{Sinh}[d\, x] + 432\, a^2\, b\, e^{4c}\, \text{Sinh}[d\, x] + 108\, b^3\, e^{4c}\, \text{Sinh}[d\, x] + 432\, a^2\, b\, d\, e^{2c}\, x\, \text{Sinh}[d\, x] +$
$108\, b^3\, d\, e^{2c}\, x\, \text{Sinh}[d\, x] - 432\, a^2\, b\, d\, e^{4c}\, x\, \text{Sinh}[d\, x] - 108\, b^3\, d\, e^{4c}\, x\, \text{Sinh}[d\, x] +$
$216\, a^2\, b\, d^2\, e^{2c}\, x^2\, \text{Sinh}[d\, x] + 54\, b^3\, d^2\, e^{2c}\, x^2\, \text{Sinh}[d\, x] + 216\, a^2\, b\, d^2\, e^{4c}\, x^2\, \text{Sinh}[d\, x] +$
$54\, b^3\, d^2\, e^{4c}\, x^2\, \text{Sinh}[d\, x] + 27\, a\, b^2\, e^{c}\, \text{Sinh}[2\, d\, x] - 27\, a\, b^2\, e^{5c}\, \text{Sinh}[2\, d\, x] +$
$54\, a\, b^2\, d\, e^{c}\, x\, \text{Sinh}[2\, d\, x] + 54\, a\, b^2\, d\, e^{5c}\, x\, \text{Sinh}[2\, d\, x] + 54\, a\, b^2\, d^2\, e^{c}\, x^2\, \text{Sinh}[2\, d\, x] -$
$54\, a\, b^2\, d^2\, e^{5c}\, x^2\, \text{Sinh}[2\, d\, x] + 4\, b^3\, \text{Sinh}[3\, d\, x] + 4\, b^3\, e^{6c}\, \text{Sinh}[3\, d\, x] + 12\, b^3\, d\, x\, \text{Sinh}[3\, d\, x] -$
$\left. 12\, b^3\, d\, e^{6c}\, x\, \text{Sinh}[3\, d\, x] + 18\, b^3\, d^2\, x^2\, \text{Sinh}[3\, d\, x] + 18\, b^3\, d^2\, e^{6c}\, x^2\, \text{Sinh}[3\, d\, x] \right) +$

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

$\frac{1}{b^2\, d^2}$

$$e f \left(-b \operatorname{Cosh}[c+d x] - a (c+d x) \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]] + \right.$$

$$a c \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right] + i a \left(-\frac{1}{8} i (2 c+i \pi+2 d x)^2 - \right.$$

$$4 i \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{ArcTan}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right] -$$

$$\frac{1}{2} \left(-2 i c+\pi-2 i d x+4 \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] -$$

$$\frac{1}{2} \left(-2 i c+\pi-2 i d x-4 \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] +$$

$$\left(\frac{\pi}{2} - i (c+d x)\right) \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]] + i \left(\operatorname{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + \right.$$

$$\left.\left.\left. \operatorname{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right)\right) + b d x \operatorname{Sinh}[c+d x]\right) +$$

$$\frac{1}{8} e^2 \left(-\frac{2 a \operatorname{Cosh}[2 (c+d x)]}{b^2 d} - \frac{4 \left(2 a^3+a b^2\right) \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]}{b^4 d} + \right.$$

$$\left. \frac{2 \left(4 a^2+b^2\right) \operatorname{Sinh}[c+d x]}{b^3 d} + \frac{2 \operatorname{Sinh}[3 (c+d x)]}{3 b d}\right) +$$

$$\frac{1}{36 b^4 d^2} e f \left(-18 b \left(4 a^2+b^2\right) \operatorname{Cosh}[c+d x] - 18 a b^2 d x \operatorname{Cosh}[2 (c+d x)] - 2 b^3 \operatorname{Cosh}[3 (c+d x)] + \right.$$

$$72 a^3 c \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right] + 36 a b^2 c \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right] - 72 a^3$$

$$\left(-\frac{1}{8}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-4\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\,\mathrm{ArcTan}\left[\frac{\left(a+\mathrm{i}\,b\right)\,\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\mathrm{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\mathrm{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\mathrm{Log}\left[a+b\,\mathrm{Sinh}\left[c+d\,x\right]\right]+\mathrm{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\mathrm{PolyLog}\left[2,\,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]\right)-36\,a\,b^2$$

$$\left(-\frac{1}{8}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-4\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\,\mathrm{ArcTan}\left[\frac{\left(a+\mathrm{i}\,b\right)\,\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\mathrm{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\mathrm{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\mathrm{Log}\left[a+b\,\mathrm{Sinh}\left[c+d\,x\right]\right]+\mathrm{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d x}}{b}\right]\right)+\right.$$

$$\left.18\,b\left(4a^2+b^2\right)d\,x\,\text{Sinh}[c+d x]+9\,a\,b^2\,\text{Sinh}[2(c+d x)]+6\,b^3\,d\,x\,\text{Sinh}[3(c+d x)]\right)$$

Problem 345: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f x)\,\text{Cosh}[c+d x]^3\,\text{Sinh}[c+d x]}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 400 leaves, 17 steps):

$$-\frac{a f x}{4 b^2 d}+\frac{a\left(a^2+b^2\right)(e+f x)^2}{2 b^4 f}-\frac{a^2 f\,\text{Cosh}[c+d x]}{b^3 d^2}-\frac{2 f\,\text{Cosh}[c+d x]}{3 b d^2}-\frac{f\,\text{Cosh}[c+d x]^3}{9 b d^2}-$$
$$\frac{a\left(a^2+b^2\right)(e+f x)\,\text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{a\left(a^2+b^2\right)(e+f x)\,\text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d}-$$
$$\frac{a\left(a^2+b^2\right) f\,\text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^2}-\frac{a\left(a^2+b^2\right) f\,\text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^2}+$$
$$\frac{a^2(e+f x)\,\text{Sinh}[c+d x]}{b^3 d}+\frac{2(e+f x)\,\text{Sinh}[c+d x]}{3 b d}+\frac{a f\,\text{Cosh}[c+d x]\,\text{Sinh}[c+d x]}{4 b^2 d^2}+$$
$$\frac{(e+f x)\,\text{Cosh}[c+d x]^2\,\text{Sinh}[c+d x]}{3 b d}-\frac{a(e+f x)\,\text{Sinh}[c+d x]^2}{2 b^2 d}$$

Result (type 4, 1263 leaves):

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

$$\frac{1}{2 b^2 d^2}f\left(-b\,\text{Cosh}[c+d x]-a(c+d x)\,\text{Log}[a+b\,\text{Sinh}[c+d x]]+\right.$$

$$a\,c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d x]}{a}\right]+i\,a\left(-\frac{1}{8}i\,(2c+i\pi+2 d x)^2-\right.$$

$$4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\mathrm{ArcTan}\left[\frac{(a+\mathrm{i}\,b)\,\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]-$$

$$\frac{1}{2}\left(-2\,\mathrm{i}\,c+\pi-2\,\mathrm{i}\,d\,x+4\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\mathrm{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\left(-2\,\mathrm{i}\,c+\pi-2\,\mathrm{i}\,d\,x-4\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\mathrm{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)\mathrm{Log}[a+b\,\mathrm{Sinh}[c+d\,x]]+\mathrm{i}\left(\mathrm{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+\right.$$

$$\left.\left.\left.\mathrm{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)\right)+b\,d\,x\,\mathrm{Sinh}[c+d\,x]\right)+$$

$$\frac{1}{8}\,e\left(-\frac{2\,a\,\mathrm{Cosh}[2\,(c+d\,x)]}{b^2\,d}-\frac{4\,(2\,a^3+a\,b^2)\,\mathrm{Log}[a+b\,\mathrm{Sinh}[c+d\,x]]}{b^4\,d}+\right.$$
$$\left.\frac{2\,(4\,a^2+b^2)\,\mathrm{Sinh}[c+d\,x]}{b^3\,d}+\frac{2\,\mathrm{Sinh}[3\,(c+d\,x)]}{3\,b\,d}\right)+$$

$$\frac{1}{72\,b^4\,d^2}\,f\left(-18\,b\,(4\,a^2+b^2)\,\mathrm{Cosh}[c+d\,x]-18\,a\,b^2\,d\,x\,\mathrm{Cosh}[2\,(c+d\,x)]-2\,b^3\,\mathrm{Cosh}[3\,(c+d\,x)]+\right.$$

$$72\,a^3\,c\,\mathrm{Log}\left[1+\frac{b\,\mathrm{Sinh}[c+d\,x]}{a}\right]+36\,a\,b^2\,c\,\mathrm{Log}\left[1+\frac{b\,\mathrm{Sinh}[c+d\,x]}{a}\right]-72\,a^3$$

$$\left(-\frac{1}{8}\,(2\,c+\mathrm{i}\,\pi+2\,d\,x)^2-4\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\mathrm{ArcTan}\left[\frac{(a+\mathrm{i}\,b)\,\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\mathrm{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\mathrm{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\mathrm{Log}[a+b\,\mathrm{Sinh}[c+d\,x]]+\mathrm{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left.\mathrm{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)-36\,a\,b^2$$

$$\left(-\frac{1}{8}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-4\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\mathrm{ArcTan}\left[\frac{(a+\mathrm{i}\,b)\,\mathrm{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\mathrm{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\mathrm{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\mathrm{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\mathrm{Log}[a+b\,\mathrm{Sinh}[c+d\,x]]+\mathrm{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left.\mathrm{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)+$$

$$\left.18\,b\,(4\,a^2+b^2)\,d\,x\,\mathrm{Sinh}[c+d\,x]+9\,a\,b^2\,\mathrm{Sinh}[2\,(c+d\,x)]+6\,b^3\,d\,x\,\mathrm{Sinh}[3\,(c+d\,x)]\right)$$

Problem 347: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 355: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(e+f\,x)\,\text{Sech}[c+d\,x]\,\text{Tanh}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 335 leaves, 18 steps):

$$\frac{a\,f\,\text{ArcTan}[\text{Sinh}[c+d\,x]]}{(a^2+b^2)\,d^2}-\frac{a\,b\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d}+$$
$$\frac{a\,b\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d}-\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{b\,d^2}+\frac{a^2\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{b\,(a^2+b^2)\,d^2}-$$
$$\frac{a\,b\,f\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^2}+\frac{a\,b\,f\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^2}-$$
$$\frac{a\,(e+f\,x)\,\text{Sech}[c+d\,x]}{(a^2+b^2)\,d}+\frac{(e+f\,x)\,\text{Tanh}[c+d\,x]}{b\,d}-\frac{a^2\,(e+f\,x)\,\text{Tanh}[c+d\,x]}{b\,(a^2+b^2)\,d}$$

Result (type 4, 432 leaves):

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

$$\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{\mathrm{i}\,a-b}-\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{\mathrm{i}\,a+b}+\frac{1}{\left(-\left(a^2+b^2\right)^2\right)^{3/2}}$$

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

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

$$\left.\sqrt{-a^2-b^2}\;f\,\text{PolyLog}\left[2,\,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\;f\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)+$$

$$\left.\frac{2\,d\,(e+f\,x)\,\text{Sech}[c+d\,x]\,(-a+b\,\text{Sinh}[c+d\,x])}{a^2+b^2}\right)$$

Problem 358: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Sech}[c+d\,x]^2\,\text{Tanh}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1176 leaves, 49 steps):

$$\frac{(e+fx)^2 \text{ArcTan}[e^{c+dx}]}{b d} - \frac{2a^2 b (e+fx)^2 \text{ArcTan}[e^{c+dx}]}{(a^2+b^2)^2 d} - \frac{a^2 (e+fx)^2 \text{ArcTan}[e^{c+dx}]}{b (a^2+b^2) d} -$$

$$\frac{f^2 \text{ArcTan}[\text{Sinh}[c+dx]]}{b d^3} + \frac{a^2 f^2 \text{ArcTan}[\text{Sinh}[c+dx]]}{b (a^2+b^2) d^3} - \frac{a b^2 (e+fx)^2 \text{Log}\left[1+\frac{b e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^2 d} -$$

$$\frac{a b^2 (e+fx)^2 \text{Log}\left[1+\frac{b e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^2 d} + \frac{a b^2 (e+fx)^2 \text{Log}\left[1+e^{2(c+dx)}\right]}{(a^2+b^2)^2 d} - \frac{a f^2 \text{Log}[\text{Cosh}[c+dx]]}{(a^2+b^2) d^3} -$$

$$\frac{i f (e+fx) \text{PolyLog}[2, -i e^{c+dx}]}{b d^2} + \frac{2 i a^2 b f (e+fx) \text{PolyLog}[2, -i e^{c+dx}]}{(a^2+b^2)^2 d^2} +$$

$$\frac{i a^2 f (e+fx) \text{PolyLog}[2, -i e^{c+dx}]}{b (a^2+b^2) d^2} + \frac{i f (e+fx) \text{PolyLog}[2, i e^{c+dx}]}{b d^2} -$$

$$\frac{2 i a^2 b f (e+fx) \text{PolyLog}[2, i e^{c+dx}]}{(a^2+b^2)^2 d^2} - \frac{i a^2 f (e+fx) \text{PolyLog}[2, i e^{c+dx}]}{b (a^2+b^2) d^2} -$$

$$\frac{2 a b^2 f (e+fx) \text{PolyLog}\left[2, -\frac{b e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^2 d^2} - \frac{2 a b^2 f (e+fx) \text{PolyLog}\left[2, -\frac{b e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^2 d^2} +$$

$$\frac{a b^2 f (e+fx) \text{PolyLog}\left[2, -e^{2(c+dx)}\right]}{(a^2+b^2)^2 d^2} + \frac{i f^2 \text{PolyLog}[3, -i e^{c+dx}]}{b d^3} -$$

$$\frac{2 i a^2 b f^2 \text{PolyLog}[3, -i e^{c+dx}]}{(a^2+b^2)^2 d^3} - \frac{i a^2 f^2 \text{PolyLog}[3, -i e^{c+dx}]}{b (a^2+b^2) d^3} - \frac{i f^2 \text{PolyLog}[3, i e^{c+dx}]}{b d^3} +$$

$$\frac{2 i a^2 b f^2 \text{PolyLog}[3, i e^{c+dx}]}{(a^2+b^2)^2 d^3} + \frac{i a^2 f^2 \text{PolyLog}[3, i e^{c+dx}]}{b (a^2+b^2) d^3} + \frac{2 a b^2 f^2 \text{PolyLog}\left[3, -\frac{b e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^2 d^3} +$$

$$\frac{2 a b^2 f^2 \text{PolyLog}\left[3, -\frac{b e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^2 d^3} - \frac{a b^2 f^2 \text{PolyLog}\left[3, -e^{2(c+dx)}\right]}{2 (a^2+b^2)^2 d^3} + \frac{f (e+fx) \text{Sech}[c+dx]}{b d^2} -$$

$$\frac{a^2 f (e+fx) \text{Sech}[c+dx]}{b (a^2+b^2) d^2} - \frac{a (e+fx)^2 \text{Sech}[c+dx]^2}{2 (a^2+b^2) d} + \frac{a f (e+fx) \text{Tanh}[c+dx]}{(a^2+b^2) d^2} +$$

$$\frac{(e+fx)^2 \text{Sech}[c+dx] \text{Tanh}[c+dx]}{2 b d} - \frac{a^2 (e+fx)^2 \text{Sech}[c+dx] \text{Tanh}[c+dx]}{2 b (a^2+b^2) d}$$

Result (type 4, 3124 leaves):

$$\frac{1}{6 (a^2+b^2)^2 d^3 (1+e^{2c})}$$

$$\Big(-12 a b^2 d^3 e^2 e^{2c} x + 12 a^3 d e^{2c} f^2 x + 12 a b^2 d e^{2c} f^2 x - 12 a b^2 d^3 e e^{2c} f x^2 - 4 a b^2 d^3 e^{2c} f^2 x^3 -$$

$$6 a^2 b d^2 e^2 \text{ArcTan}[e^{c+dx}] + 6 b^3 d^2 e^2 \text{ArcTan}[e^{c+dx}] - 6 a^2 b d^2 e^2 e^{2c} \text{ArcTan}[e^{c+dx}] +$$

$$6 b^3 d^2 e^2 e^{2c} \text{ArcTan}[e^{c+dx}] - 12 a^2 b f^2 \text{ArcTan}[e^{c+dx}] - 12 b^3 f^2 \text{ArcTan}[e^{c+dx}] -$$

$$12 a^2 b e^{2c} f^2 \text{ArcTan}[e^{c+dx}] - 12 b^3 e^{2c} f^2 \text{ArcTan}[e^{c+dx}] - 6 i a^2 b d^2 e f x \text{Log}[1 - i e^{c+dx}] +$$

$$6\,i\,b^3\,d^2\,e\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-6\,i\,a^2\,b\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+$$
$$6\,i\,b^3\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-3\,i\,a^2\,b\,d^2\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+$$
$$3\,i\,b^3\,d^2\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-3\,i\,a^2\,b\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+$$
$$3\,i\,b^3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+6\,i\,a^2\,b\,d^2\,e\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$
$$6\,i\,b^3\,d^2\,e\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+6\,i\,a^2\,b\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$
$$6\,i\,b^3\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+3\,i\,a^2\,b\,d^2\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$
$$3\,i\,b^3\,d^2\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+3\,i\,a^2\,b\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$
$$3\,i\,b^3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+6\,a\,b^2\,d^2\,e^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$6\,a\,b^2\,d^2\,e^2\,e^{2\,c}\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-6\,a^3\,f^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-6\,a\,b^2\,f^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-$$
$$6\,a^3\,e^{2\,c}\,f^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-6\,a\,b^2\,e^{2\,c}\,f^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d^2\,e\,f\,x\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$12\,a\,b^2\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+6\,a\,b^2\,d^2\,f^2\,x^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$6\,a\,b^2\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+6\,i\,b\,\left(a^2-b^2\right)\,d\,\left(1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]+$$
$$6\,i\,b\,\left(-a^2+b^2\right)\,d\,\left(1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]+$$
$$6\,a\,b^2\,d\,e\,f\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+6\,a\,b^2\,d\,e\,e^{2\,c}\,f\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+$$
$$6\,a\,b^2\,d\,f^2\,x\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+6\,a\,b^2\,d\,e^{2\,c}\,f^2\,x\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]-$$
$$6\,i\,a^2\,b\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+6\,i\,b^3\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]-$$
$$6\,i\,a^2\,b\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+6\,i\,b^3\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+$$
$$6\,i\,a^2\,b\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-6\,i\,b^3\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]+$$
$$6\,i\,a^2\,b\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-6\,i\,b^3\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-$$
$$3\,a\,b^2\,f^2\,\text{PolyLog}\left[3,-e^{2\,(c+d\,x)}\right]-3\,a\,b^2\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-e^{2\,(c+d\,x)}\right]\Big)+$$

$$\frac{1}{3\,\left(a^2+b^2\right)^2\,d^3\,\left(-1+e^{2\,c}\right)}\,a\,b^2\,\Bigg(6\,d^3\,e^2\,e^{2\,c}\,x+6\,d^3\,e\,e^{2\,c}\,f\,x^2+2\,d^3\,e^{2\,c}\,f^2\,x^3+$$
$$3\,d^2\,e^2\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]-3\,d^2\,e^2\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^2\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^2\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6 f^2 \text{PolyLog}\left[3, -\frac{b\, e^{2c+dx}}{a\, e^c + \sqrt{(a^2+b^2)\, e^{2c}}}\right] + 6\, e^{2c} f^2 \text{PolyLog}\left[3, -\frac{b\, e^{2c+dx}}{a\, e^c + \sqrt{(a^2+b^2)\, e^{2c}}}\right]\Bigg) +$$

$$\frac{1}{24\,(a^2+b^2)^2 d^2} \text{Csch}[c]\, \text{Sech}[c]\, \text{Sech}[c+d x]^2 \Big(6 a^3 e f + 6 a b^2 e f - 12 a b^2 d^2 e^2 x + 6 a^3 f^2 x +$$
$$6 a b^2 f^2 x - 12 a b^2 d^2 e f x^2 - 4 a b^2 d^2 f^2 x^3 - 6 a^3 e f \text{Cosh}[2 c] - 6 a b^2 e f \text{Cosh}[2 c] -$$
$$6 a^3 f^2 x \text{Cosh}[2 c] - 6 a b^2 f^2 x \text{Cosh}[2 c] - 6 a^3 e f \text{Cosh}[2 d x] - 6 a b^2 e f \text{Cosh}[2 d x] -$$
$$6 a^3 f^2 x \text{Cosh}[2 d x] - 6 a b^2 f^2 x \text{Cosh}[2 d x] - 3 a^2 b d e^2 \text{Cosh}[c - d x] - 3 b^3 d e^2 \text{Cosh}[c - d x] -$$
$$6 a^2 b d e f x \text{Cosh}[c - d x] - 6 b^3 d e f x \text{Cosh}[c - d x] - 3 a^2 b d f^2 x^2 \text{Cosh}[c - d x] -$$
$$3 b^3 d f^2 x^2 \text{Cosh}[c - d x] + 3 a^2 b d e^2 \text{Cosh}[3 c + d x] + 3 b^3 d e^2 \text{Cosh}[3 c + d x] +$$
$$6 a^2 b d e f x \text{Cosh}[3 c + d x] + 6 b^3 d e f x \text{Cosh}[3 c + d x] + 3 a^2 b d f^2 x^2 \text{Cosh}[3 c + d x] +$$
$$3 b^3 d f^2 x^2 \text{Cosh}[3 c + d x] + 6 a^3 e f \text{Cosh}[2 c + 2 d x] + 6 a b^2 e f \text{Cosh}[2 c + 2 d x] -$$
$$12 a b^2 d^2 e^2 x \text{Cosh}[2 c + 2 d x] + 6 a^3 f^2 x \text{Cosh}[2 c + 2 d x] + 6 a b^2 f^2 x \text{Cosh}[2 c + 2 d x] -$$
$$12 a b^2 d^2 e f x^2 \text{Cosh}[2 c + 2 d x] - 4 a b^2 d^2 f^2 x^3 \text{Cosh}[2 c + 2 d x] - 6 a^3 d e^2 \text{Sinh}[2 c] -$$
$$6 a b^2 d e^2 \text{Sinh}[2 c] - 12 a^3 d e f x \text{Sinh}[2 c] - 12 a b^2 d e f x \text{Sinh}[2 c] - 6 a^3 d f^2 x^2 \text{Sinh}[2 c] -$$
$$6 a b^2 d f^2 x^2 \text{Sinh}[2 c] + 6 a^2 b e f \text{Sinh}[c - d x] + 6 b^3 e f \text{Sinh}[c - d x] +$$
$$6 a^2 b f^2 x \text{Sinh}[c - d x] + 6 b^3 f^2 x \text{Sinh}[c - d x] + 6 a^2 b e f \text{Sinh}[3 c + d x] +$$
$$6 b^3 e f \text{Sinh}[3 c + d x] + 6 a^2 b f^2 x \text{Sinh}[3 c + d x] + 6 b^3 f^2 x \text{Sinh}[3 c + d x]\Big)$$

Problem 361: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sech}[c+d x]^2 \text{Tanh}[c+d x]}{(e+f x)\,(a+b \text{Sinh}[c+d x])}\, dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d x]^2 \text{Tanh}[c+d x]}{(e+f x)\,(a+b \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 362: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]^2}{a+b \text{Sinh}[c+d x]}\, dx$$

Optimal (type 4, 606 leaves, 22 steps):

$$\frac{3 f^3 x}{8 b d^3}+\frac{(e+f x)^3}{4 b d}-\frac{a^2 (e+f x)^4}{4 b^3 f}+\frac{6 a f^3 \text{Cosh}[c+d x]}{b^2 d^4}+\frac{3 a f (e+f x)^2 \text{Cosh}[c+d x]}{b^2 d^2}+$$
$$\frac{a^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d}+\frac{a^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d}+$$
$$\frac{3 a^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^2}+\frac{3 a^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^2}-$$
$$\frac{6 a^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^3}-\frac{6 a^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^3}+$$
$$\frac{6 a^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^4}+\frac{6 a^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^4}-$$
$$\frac{6 a f^2 (e+f x) \text{Sinh}[c+d x]}{b^2 d^3}-\frac{a (e+f x)^3 \text{Sinh}[c+d x]}{b^2 d}-\frac{3 f^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{8 b d^4}-$$
$$\frac{3 f (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b d^2}+\frac{3 f^2 (e+f x) \text{Sinh}[c+d x]^2}{4 b d^3}+\frac{(e+f x)^3 \text{Sinh}[c+d x]^2}{2 b d}$$

Result (type 4, 3188 leaves):

$$\frac{1}{32 b^3 d^4} e^{-2 c} \Bigg(-48 a^2 c^2 d^2 e^2 e^{2 c} f-48 i a^2 c d^2 e^2 e^{2 c} f \pi+12 a^2 d^2 e^2 e^{2 c} f \pi^2-96 a^2 c d^3 e^2 e^{2 c} f x-$$
$$48 i a^2 d^3 e^2 e^{2 c} f \pi x-48 a^2 d^4 e^2 e^{2 c} f x^2-32 a^2 d^4 e e^{2 c} f^2 x^3-8 a^2 d^4 e^{2 c} f^3 x^4-$$
$$384 a^2 d^2 e^2 e^{2 c} f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+$$
$$16 a b d^3 e^3 e^c \text{Cosh}[d x]-16 a b d^3 e^3 e^{3 c} \text{Cosh}[d x]+48 a b d^2 e^2 e^c f \text{Cosh}[d x]+$$
$$48 a b d^2 e^2 e^{3 c} f \text{Cosh}[d x]+96 a b d e e^c f^2 \text{Cosh}[d x]-96 a b d e e^{3 c} f^2 \text{Cosh}[d x]+$$
$$96 a b e^c f^3 \text{Cosh}[d x]+96 a b e^{3 c} f^3 \text{Cosh}[d x]+48 a b d^3 e^2 e^c f x \text{Cosh}[d x]-$$
$$48 a b d^3 e^2 e^{3 c} f x \text{Cosh}[d x]+96 a b d^2 e e^c f^2 x \text{Cosh}[d x]+96 a b d^2 e e^{3 c} f^2 x \text{Cosh}[d x]+$$
$$96 a b d e^c f^3 x \text{Cosh}[d x]-96 a b d e^{3 c} f^3 x \text{Cosh}[d x]+48 a b d^3 e e^c f^2 x^2 \text{Cosh}[d x]-$$
$$48 a b d^3 e e^{3 c} f^2 x^2 \text{Cosh}[d x]+48 a b d^2 e^c f^3 x^2 \text{Cosh}[d x]+48 a b d^2 e^{3 c} f^3 x^2 \text{Cosh}[d x]+$$
$$16 a b d^3 e^c f^3 x^3 \text{Cosh}[d x]-16 a b d^3 e^{3 c} f^3 x^3 \text{Cosh}[d x]+4 b^2 d^3 e^3 \text{Cosh}[2 d x]+$$
$$4 b^2 d^3 e^3 e^{4 c} \text{Cosh}[2 d x]+6 b^2 d^2 e^2 f \text{Cosh}[2 d x]-6 b^2 d^2 e^2 e^{4 c} f \text{Cosh}[2 d x]+$$
$$6 b^2 d e f^2 \text{Cosh}[2 d x]+6 b^2 d e e^{4 c} f^2 \text{Cosh}[2 d x]+3 b^2 f^3 \text{Cosh}[2 d x]-$$
$$3 b^2 e^{4 c} f^3 \text{Cosh}[2 d x]+12 b^2 d^3 e^2 f x \text{Cosh}[2 d x]+12 b^2 d^3 e^2 e^{4 c} f x \text{Cosh}[2 d x]+$$
$$12 b^2 d^2 e f^2 x \text{Cosh}[2 d x]-12 b^2 d^2 e e^{4 c} f^2 x \text{Cosh}[2 d x]+6 b^2 d f^3 x \text{Cosh}[2 d x]+$$
$$6 b^2 d e^{4 c} f^3 x \text{Cosh}[2 d x]+12 b^2 d^3 e f^2 x^2 \text{Cosh}[2 d x]+12 b^2 d^3 e e^{4 c} f^2 x^2 \text{Cosh}[2 d x]+$$
$$6 b^2 d^2 f^3 x^2 \text{Cosh}[2 d x]-6 b^2 d^2 e^{4 c} f^3 x^2 \text{Cosh}[2 d x]+4 b^2 d^3 f^3 x^3 \text{Cosh}[2 d x]+$$
$$4 b^2 d^3 e^{4 c} f^3 x^3 \text{Cosh}[2 d x]+96 a^2 c d^2 e^2 e^{2 c} f \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$48\,i\,a^2 d^2 e^2 e^{2c} f \pi \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$96\,a^2 d^3 e^2 e^{2c} f x \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$192\,i\,a^2 d^2 e^2 e^{2c} f \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$96\,a^2 c d^2 e^2 e^{2c} f \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+48\,i\,a^2 d^2 e^2 e^{2c} f \pi$$

$$\operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+96\,a^2 d^3 e^2 e^{2c} f x \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$192\,i\,a^2 d^2 e^2 e^{2c} f \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$96\,a^2 d^3 e\, e^{2c} f^2 x^2 \operatorname{Log}\left[1+\frac{b\, e^{2c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+32\,a^2 d^3 e^{2c} f^3 x^3$$

$$\operatorname{Log}\left[1+\frac{b\, e^{2c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+96\,a^2 d^3 e\, e^{2c} f^2 x^2 \operatorname{Log}\left[1+\frac{b\, e^{2c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$32\,a^2 d^3 e^{2c} f^3 x^3 \operatorname{Log}\left[1+\frac{b\, e^{2c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+32\,a^2 d^3 e^3 e^{2c} \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]-$$

$$48\,i\,a^2 d^2 e^2 e^{2c} f \pi \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]-96\,a^2 c d^2 e^2 e^{2c} f \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]+$$

$$96\,a^2 d^2 e^2 e^{2c} f \operatorname{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$96\,a^2 d^2 e^2 e^{2c} f \operatorname{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$192\,a^2 d^2 e\, e^{2c} f^2 x \operatorname{PolyLog}\left[2,-\frac{b\, e^{2c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$96\,a^2 d^2 e^{2c} f^3 x^2 \operatorname{PolyLog}\left[2,-\frac{b\, e^{2c+d x}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$192\,a^2 d^2 e\, e^{2c} f^2 x \operatorname{PolyLog}\left[2,-\frac{b\, e^{2c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$

$$96\,a^2 d^2 e^{2c} f^3 x^2 \operatorname{PolyLog}\left[2,-\frac{b\, e^{2c+d x}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$

$$192\, a^2\, d\, e\, e^{2c}\, f^2\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+dx}}{a\, e^c - \sqrt{(a^2+b^2)\, e^{2c}}}\right] -$$

$$192\, a^2\, d\, e^{2c}\, f^3\, x\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+dx}}{a\, e^c - \sqrt{(a^2+b^2)\, e^{2c}}}\right] -$$

$$192\, a^2\, d\, e\, e^{2c}\, f^2\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+dx}}{a\, e^c + \sqrt{(a^2+b^2)\, e^{2c}}}\right] -$$

$$192\, a^2\, d\, e^{2c}\, f^3\, x\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+dx}}{a\, e^c + \sqrt{(a^2+b^2)\, e^{2c}}}\right] +$$

$$192\, a^2\, e^{2c}\, f^3\, \text{PolyLog}\left[4, -\frac{b\, e^{2c+dx}}{a\, e^c - \sqrt{(a^2+b^2)\, e^{2c}}}\right] +$$

$$192\, a^2\, e^{2c}\, f^3\, \text{PolyLog}\left[4, -\frac{b\, e^{2c+dx}}{a\, e^c + \sqrt{(a^2+b^2)\, e^{2c}}}\right] - 16\, a\, b\, d^3\, e^3\, e^c\, \text{Sinh}[d\, x] -$$

$$16\, a\, b\, d^3\, e^3\, e^{3c}\, \text{Sinh}[d\, x] - 48\, a\, b\, d^2\, e^2\, e^c\, f\, \text{Sinh}[d\, x] + 48\, a\, b\, d^2\, e^2\, e^{3c}\, f\, \text{Sinh}[d\, x] -$$
$$96\, a\, b\, d\, e\, e^c\, f^2\, \text{Sinh}[d\, x] - 96\, a\, b\, d\, e\, e^{3c}\, f^2\, \text{Sinh}[d\, x] - 96\, a\, b\, e^c\, f^3\, \text{Sinh}[d\, x] +$$
$$96\, a\, b\, e^{3c}\, f^3\, \text{Sinh}[d\, x] - 48\, a\, b\, d^3\, e^2\, e^c\, f\, x\, \text{Sinh}[d\, x] - 48\, a\, b\, d^3\, e^2\, e^{3c}\, f\, x\, \text{Sinh}[d\, x] -$$
$$96\, a\, b\, d^2\, e\, e^c\, f^2\, x\, \text{Sinh}[d\, x] + 96\, a\, b\, d^2\, e\, e^{3c}\, f^2\, x\, \text{Sinh}[d\, x] - 96\, a\, b\, d\, e^c\, f^3\, x\, \text{Sinh}[d\, x] -$$
$$96\, a\, b\, d\, e^{3c}\, f^3\, x\, \text{Sinh}[d\, x] - 48\, a\, b\, d^3\, e\, e^c\, f^2\, x^2\, \text{Sinh}[d\, x] - 48\, a\, b\, d^3\, e\, e^{3c}\, f^2\, x^2\, \text{Sinh}[d\, x] -$$
$$48\, a\, b\, d^2\, e^c\, f^3\, x^2\, \text{Sinh}[d\, x] + 48\, a\, b\, d^2\, e^{3c}\, f^3\, x^2\, \text{Sinh}[d\, x] - 16\, a\, b\, d^3\, e^c\, f^3\, x^3\, \text{Sinh}[d\, x] -$$
$$16\, a\, b\, d^3\, e^{3c}\, f^3\, x^3\, \text{Sinh}[d\, x] - 4\, b^2\, d^3\, e^3\, \text{Sinh}[2\, d\, x] + 4\, b^2\, d^3\, e^3\, e^{4c}\, \text{Sinh}[2\, d\, x] -$$
$$6\, b^2\, d^2\, e^2\, f\, \text{Sinh}[2\, d\, x] - 6\, b^2\, d^2\, e^2\, e^{4c}\, f\, \text{Sinh}[2\, d\, x] - 6\, b^2\, d\, e\, f^2\, \text{Sinh}[2\, d\, x] +$$
$$6\, b^2\, d\, e\, e^{4c}\, f^2\, \text{Sinh}[2\, d\, x] - 3\, b^2\, f^3\, \text{Sinh}[2\, d\, x] - 3\, b^2\, e^{4c}\, f^3\, \text{Sinh}[2\, d\, x] -$$
$$12\, b^2\, d^3\, e^2\, f\, x\, \text{Sinh}[2\, d\, x] + 12\, b^2\, d^3\, e^2\, e^{4c}\, f\, x\, \text{Sinh}[2\, d\, x] - 12\, b^2\, d^2\, e\, f^2\, x\, \text{Sinh}[2\, d\, x] -$$
$$12\, b^2\, d^2\, e\, e^{4c}\, f^2\, x\, \text{Sinh}[2\, d\, x] - 6\, b^2\, d\, f^3\, x\, \text{Sinh}[2\, d\, x] + 6\, b^2\, d\, e^{4c}\, f^3\, x\, \text{Sinh}[2\, d\, x] -$$
$$12\, b^2\, d^3\, e\, f^2\, x^2\, \text{Sinh}[2\, d\, x] + 12\, b^2\, d^3\, e\, e^{4c}\, f^2\, x^2\, \text{Sinh}[2\, d\, x] - 6\, b^2\, d^2\, f^3\, x^2\, \text{Sinh}[2\, d\, x] -$$

$$\left. 6\, b^2\, d^2\, e^{4c}\, f^3\, x^2\, \text{Sinh}[2\, d\, x] - 4\, b^2\, d^3\, f^3\, x^3\, \text{Sinh}[2\, d\, x] + 4\, b^2\, d^3\, e^{4c}\, f^3\, x^3\, \text{Sinh}[2\, d\, x] \right)$$

Problem 363: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\, x)^2\, \text{Cosh}[c+d\, x]\, \text{Sinh}[c+d\, x]^2}{a+b\, \text{Sinh}[c+d\, x]}\, dx$$

Optimal (type 4, 449 leaves, 17 steps):

$$\frac{e f x}{2 b d}+\frac{f^2 x^2}{4 b d}-\frac{a^2 (e+f x)^3}{3 b^3 f}+\frac{2 a f (e+f x) \text{Cosh}[c+d x]}{b^2 d^2}+\frac{a^2 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d}+$$
$$\frac{a^2 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d}+\frac{2 a^2 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^2}+$$
$$\frac{2 a^2 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^2}-\frac{2 a^2 f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^3 d^3}-$$
$$\frac{2 a^2 f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^3 d^3}-\frac{2 a f^2 \text{Sinh}[c+d x]}{b^2 d^3}-\frac{a (e+f x)^2 \text{Sinh}[c+d x]}{b^2 d}-$$
$$\frac{f (e+f x) \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 b d^2}+\frac{f^2 \text{Sinh}[c+d x]^2}{4 b d^3}+\frac{(e+f x)^2 \text{Sinh}[c+d x]^2}{2 b d}$$

Result (type 4, 1942 leaves):

$$\frac{1}{48 b^3 d^3} e^{-2 c} \Bigg(-48 a^2 c^2 d e e^{2 c} f-48 i a^2 c d e e^{2 c} f \pi+12 a^2 d e e^{2 c} f \pi^2-$$
$$96 a^2 c d^2 e e^{2 c} f x-48 i a^2 d^2 e e^{2 c} f \pi x-48 a^2 d^3 e e^{2 c} f x^2-16 a^2 d^3 e^{2 c} f^2 x^3-$$
$$384 a^2 d e e^{2 c} f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+$$
$$24 a b d^2 e^2 e^c \text{Cosh}[d x]-24 a b d^2 e^2 e^{3 c} \text{Cosh}[d x]+48 a b d e e^c f \text{Cosh}[d x]+$$
$$48 a b d e e^{3 c} f \text{Cosh}[d x]+48 a b e^c f^2 \text{Cosh}[d x]-48 a b e^{3 c} f^2 \text{Cosh}[d x]+$$
$$48 a b d^2 e e^c f x \text{Cosh}[d x]-48 a b d^2 e e^{3 c} f x \text{Cosh}[d x]+48 a b d e^c f^2 x \text{Cosh}[d x]+$$
$$48 a b d e^{3 c} f^2 x \text{Cosh}[d x]+24 a b d^2 e^c f^2 x^2 \text{Cosh}[d x]-24 a b d^2 e^{3 c} f^2 x^2 \text{Cosh}[d x]+$$
$$6 b^2 d^2 e^2 \text{Cosh}[2 d x]+6 b^2 d^2 e^2 e^{4 c} \text{Cosh}[2 d x]+6 b^2 d e f \text{Cosh}[2 d x]-$$
$$6 b^2 d e e^{4 c} f \text{Cosh}[2 d x]+3 b^2 f^2 \text{Cosh}[2 d x]+3 b^2 e^{4 c} f^2 \text{Cosh}[2 d x]+$$
$$12 b^2 d^2 e f x \text{Cosh}[2 d x]+12 b^2 d^2 e e^{4 c} f x \text{Cosh}[2 d x]+6 b^2 d f^2 x \text{Cosh}[2 d x]-$$
$$6 b^2 d e^{4 c} f^2 x \text{Cosh}[2 d x]+6 b^2 d^2 f^2 x^2 \text{Cosh}[2 d x]+6 b^2 d^2 e^{4 c} f^2 x^2 \text{Cosh}[2 d x]+$$
$$96 a^2 c d e e^{2 c} f \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+48 i a^2 d e e^{2 c} f \pi$$
$$\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+96 a^2 d^2 e e^{2 c} f x \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$
$$192 i a^2 d e e^{2 c} f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$
$$96 a^2 c d e e^{2 c} f \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+48 i a^2 d e e^{2 c} f \pi \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$96\,a^2\,d^2\,e\,\mathbb{e}^{2\,c}\,f\,x\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,\mathbb{e}^{c+d\,x}}{b}\right]-192\,\mathbb{i}\,a^2\,d\,e\,\mathbb{e}^{2\,c}\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathbb{i}\,a}{b}}}{\sqrt{2}}\right]$$

$$\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,\mathbb{e}^{c+d\,x}}{b}\right]+48\,a^2\,d^2\,\mathbb{e}^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+$$

$$48\,a^2\,d^2\,\mathbb{e}^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+48\,a^2\,d^2\,e^2\,\mathbb{e}^{2\,c}\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]-$$

$$48\,\mathbb{i}\,a^2\,d\,e\,\mathbb{e}^{2\,c}\,f\,\pi\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]-96\,a^2\,c\,d\,e\,\mathbb{e}^{2\,c}\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+d\,x\right]}{a}\right]+$$

$$96\,a^2\,d\,e\,\mathbb{e}^{2\,c}\,f\,\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,\mathbb{e}^{c+d\,x}}{b}\right]+$$

$$96\,a^2\,d\,e\,\mathbb{e}^{2\,c}\,f\,\text{PolyLog}\left[2,\,\frac{\left(a+\sqrt{a^2+b^2}\right)\,\mathbb{e}^{c+d\,x}}{b}\right]+$$

$$96\,a^2\,d\,\mathbb{e}^{2\,c}\,f^2\,x\,\text{PolyLog}\left[2,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+96\,a^2\,d\,\mathbb{e}^{2\,c}\,f^2\,x$$

$$\text{PolyLog}\left[2,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-96\,a^2\,\mathbb{e}^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-$$

$$96\,a^2\,\mathbb{e}^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-24\,a\,b\,d^2\,e^2\,\mathbb{e}^c\,\text{Sinh}\left[d\,x\right]-$$

$$24\,a\,b\,d^2\,e^2\,\mathbb{e}^{3\,c}\,\text{Sinh}\left[d\,x\right]-48\,a\,b\,d\,e\,\mathbb{e}^c\,f\,\text{Sinh}\left[d\,x\right]+48\,a\,b\,d\,e\,\mathbb{e}^{3\,c}\,f\,\text{Sinh}\left[d\,x\right]-$$
$$48\,a\,b\,\mathbb{e}^c\,f^2\,\text{Sinh}\left[d\,x\right]-48\,a\,b\,\mathbb{e}^{3\,c}\,f^2\,\text{Sinh}\left[d\,x\right]-48\,a\,b\,d^2\,e\,\mathbb{e}^c\,f\,x\,\text{Sinh}\left[d\,x\right]-$$
$$48\,a\,b\,d^2\,e\,\mathbb{e}^{3\,c}\,f\,x\,\text{Sinh}\left[d\,x\right]-48\,a\,b\,d\,\mathbb{e}^c\,f^2\,x\,\text{Sinh}\left[d\,x\right]+48\,a\,b\,d\,\mathbb{e}^{3\,c}\,f^2\,x\,\text{Sinh}\left[d\,x\right]-$$
$$24\,a\,b\,d^2\,\mathbb{e}^c\,f^2\,x^2\,\text{Sinh}\left[d\,x\right]-24\,a\,b\,d^2\,\mathbb{e}^{3\,c}\,f^2\,x^2\,\text{Sinh}\left[d\,x\right]-$$
$$6\,b^2\,d^2\,e^2\,\text{Sinh}\left[2\,d\,x\right]+6\,b^2\,d^2\,e^2\,\mathbb{e}^{4\,c}\,\text{Sinh}\left[2\,d\,x\right]-6\,b^2\,d\,e\,f\,\text{Sinh}\left[2\,d\,x\right]-$$
$$6\,b^2\,d\,e\,\mathbb{e}^{4\,c}\,f\,\text{Sinh}\left[2\,d\,x\right]-3\,b^2\,f^2\,\text{Sinh}\left[2\,d\,x\right]+3\,b^2\,\mathbb{e}^{4\,c}\,f^2\,\text{Sinh}\left[2\,d\,x\right]-$$
$$12\,b^2\,d^2\,e\,f\,x\,\text{Sinh}\left[2\,d\,x\right]+12\,b^2\,d^2\,e\,\mathbb{e}^{4\,c}\,f\,x\,\text{Sinh}\left[2\,d\,x\right]-6\,b^2\,d\,f^2\,x\,\text{Sinh}\left[2\,d\,x\right]-$$

$$\left.6\,b^2\,d\,\mathbb{e}^{4\,c}\,f^2\,x\,\text{Sinh}\left[2\,d\,x\right]-6\,b^2\,d^2\,f^2\,x^2\,\text{Sinh}\left[2\,d\,x\right]+6\,b^2\,d^2\,\mathbb{e}^{4\,c}\,f^2\,x^2\,\text{Sinh}\left[2\,d\,x\right]\right)$$

Problem 364: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)\,\text{Cosh}\left[c+d\,x\right]\,\text{Sinh}\left[c+d\,x\right]^2}{a+b\,\text{Sinh}\left[c+d\,x\right]}\,\mathbb{d}x$$

Optimal (type 4, 278 leaves, 14 steps):

$$\frac{f\,x}{4\,b\,d}-\frac{a^2\,(e+f\,x)^2}{2\,b^3\,f}+\frac{a\,f\,\text{Cosh}[c+d\,x]}{b^2\,d^2}+\frac{a^2\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d}+$$
$$\frac{a^2\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d}+\frac{a^2\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^3\,d^2}+\frac{a^2\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^3\,d^2}-$$
$$\frac{a\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{b^2\,d}-\frac{f\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{4\,b\,d^2}+\frac{(e+f\,x)\,\text{Sinh}[c+d\,x]^2}{2\,b\,d}$$

Result (type 4, 675 leaves) :

$$\frac{1}{8 b^3 d^2}\left(-4 a^2 c^2 f - 4 i a^2 c f \pi + a^2 f \pi^2 - 8 a^2 c d f x - 4 i a^2 d f \pi x - 4 a^2 d^2 f x^2 - \right.$$

$$32 a^2 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a + i b) \text{Cot}\left[\frac{1}{4}(2 i c + \pi + 2 i d x)\right]}{\sqrt{a^2+b^2}}\right] + 8 a b f \text{Cosh}[c + d x] +$$

$$2 b^2 d e \text{Cosh}[2(c + d x)] + 2 b^2 d f x \text{Cosh}[2(c + d x)] + 8 a^2 c f \text{Log}\left[1 + \frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] +$$

$$4 i a^2 f \pi \text{Log}\left[1 + \frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + 8 a^2 d f x \text{Log}\left[1 + \frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] +$$

$$16 i a^2 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1 + \frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] +$$

$$8 a^2 c f \text{Log}\left[1 - \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + 4 i a^2 f \pi \text{Log}\left[1 - \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] +$$

$$8 a^2 d f x \text{Log}\left[1 - \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] -$$

$$16 i a^2 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1 - \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + 8 a^2 d e \text{Log}[a + b \text{Sinh}[c + d x]] -$$

$$4 i a^2 f \pi \text{Log}[a + b \text{Sinh}[c + d x]] - 8 a^2 c f \text{Log}\left[1 + \frac{b \text{Sinh}[c + d x]}{a}\right] +$$

$$8 a^2 f \text{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + 8 a^2 f \text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] -$$

$$\left. 8 a b d e \text{Sinh}[c + d x] - 8 a b d f x \text{Sinh}[c + d x] - b^2 f \text{Sinh}[2(c + d x)]\right)$$

Problem 366: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c + d x] \text{Sinh}[c + d x]^2}{(e + f x)(a + b \text{Sinh}[c + d x])} dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c + d x] \text{Sinh}[c + d x]^2}{(e + f x)(a + b \text{Sinh}[c + d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 367: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Cosh}[c+d x]^2 \operatorname{Sinh}[c+d x]^2}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 897 leaves, 31 steps):

$$-\frac{3 a e f^2 x}{4 b^2 d^2}-\frac{3 a f^3 x^2}{8 b^2 d^2}-\frac{a^3 (e+f x)^4}{4 b^4 f}-\frac{a (e+f x)^4}{8 b^2 f}+\frac{6 a^2 f^2 (e+f x) \operatorname{Cosh}[c+d x]}{b^3 d^3}+\frac{4 f^2 (e+f x) \operatorname{Cosh}[c+d x]}{3 b d^3}+\frac{a^2 (e+f x)^3 \operatorname{Cosh}[c+d x]}{b^3 d}+\frac{3 a f^3 \operatorname{Cosh}[c+d x]^2}{8 b^2 d^4}+\frac{3 a f (e+f x)^2 \operatorname{Cosh}[c+d x]^2}{4 b^2 d^2}+\frac{2 f^2 (e+f x) \operatorname{Cosh}[c+d x]^3}{9 b d^3}+\frac{(e+f x)^3 \operatorname{Cosh}[c+d x]^3}{3 b d}+\frac{a^2 \sqrt{a^2+b^2} (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{a^2 \sqrt{a^2+b^2} (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d}+\frac{3 a^2 \sqrt{a^2+b^2} f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^2}-\frac{3 a^2 \sqrt{a^2+b^2} f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^2}-\frac{6 a^2 \sqrt{a^2+b^2} f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^3}+\frac{6 a^2 \sqrt{a^2+b^2} f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^3}+\frac{6 a^2 \sqrt{a^2+b^2} f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^4}-\frac{6 a^2 \sqrt{a^2+b^2} f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^4}-\frac{6 a^2 f^3 \operatorname{Sinh}[c+d x]}{b^3 d^4}-\frac{14 f^3 \operatorname{Sinh}[c+d x]}{9 b d^4}-\frac{3 a^2 f (e+f x)^2 \operatorname{Sinh}[c+d x]}{b^3 d^2}-\frac{2 f (e+f x)^2 \operatorname{Sinh}[c+d x]}{3 b d^2}-\frac{3 a f^2 (e+f x) \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{4 b^2 d^3}-\frac{a (e+f x)^3 \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{2 b^2 d}-\frac{f (e+f x)^2 \operatorname{Cosh}[c+d x]^2 \operatorname{Sinh}[c+d x]}{3 b d^2}-\frac{2 f^3 \operatorname{Sinh}[c+d x]^3}{27 b d^4}$$

Result (type 4, 2729 leaves):

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

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

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

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

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

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

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

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

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

$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,\sqrt{-a^2-b^2}\,e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$\left.6\,\sqrt{-a^2-b^2}\,e^c\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)+$$

$$\left(\left(4\,a^2+b^2\right)\,\left(d^3\,e^3+3\,d^2\,e^2\,f+6\,d\,e\,f^2+6\,f^3\right)\,\left(\frac{\text{Cosh}[c]}{2\,b^3\,d^4}-\frac{\text{Sinh}[c]}{2\,b^3\,d^4}\right)+\right.$$

$$\left(4 a^2 d^2 e^2 f+b^2 d^2 e^2 f+8 a^2 d e f^2+2 b^2 d e f^2+8 a^2 f^3+2 b^2 f^3\right) \left(\frac{3 x \operatorname{Cosh}[c]}{2 b^3 d^3}-\frac{3 x \operatorname{Sinh}[c]}{2 b^3 d^3}\right)+$$
$$\left(4 a^2 d e f^2+b^2 d e f^2+4 a^2 f^3+b^2 f^3\right) \left(\frac{3 x^2 \operatorname{Cosh}[c]}{2 b^3 d^2}-\frac{3 x^2 \operatorname{Sinh}[c]}{2 b^3 d^2}\right)+$$
$$\left.\left(4 a^2+b^2\right) \left(\frac{f^3 x^3 \operatorname{Cosh}[c]}{2 b^3 d}-\frac{f^3 x^3 \operatorname{Sinh}[c]}{2 b^3 d}\right)\right) \left(\operatorname{Cosh}[d x]-\operatorname{Sinh}[d x]\right)+$$
$$\left(\left(4 a^2+b^2\right) \left(d^3 e^3-3 d^2 e^2 f+6 d e f^2-6 f^3\right) \left(\frac{\operatorname{Cosh}[c]}{2 b^3 d^4}+\frac{\operatorname{Sinh}[c]}{2 b^3 d^4}\right)+\frac{1}{2 b^3 d^2}\right.$$
$$3 x^2 \left(4 a^2 d e f^2 \operatorname{Cosh}[c]+b^2 d e f^2 \operatorname{Cosh}[c]-4 a^2 f^3 \operatorname{Cosh}[c]-b^2 f^3 \operatorname{Cosh}[c]+\right.$$
$$\left.4 a^2 d e f^2 \operatorname{Sinh}[c]+b^2 d e f^2 \operatorname{Sinh}[c]-4 a^2 f^3 \operatorname{Sinh}[c]-b^2 f^3 \operatorname{Sinh}[c]\right)+\frac{1}{2 b^3 d^3}$$
$$3 x \left(4 a^2 d^2 e^2 f \operatorname{Cosh}[c]+b^2 d^2 e^2 f \operatorname{Cosh}[c]-8 a^2 d e f^2 \operatorname{Cosh}[c]-2 b^2 d e f^2 \operatorname{Cosh}[c]+\right.$$
$$8 a^2 f^3 \operatorname{Cosh}[c]+2 b^2 f^3 \operatorname{Cosh}[c]+4 a^2 d^2 e^2 f \operatorname{Sinh}[c]+b^2 d^2 e^2 f \operatorname{Sinh}[c]-$$
$$\left.8 a^2 d e f^2 \operatorname{Sinh}[c]-2 b^2 d e f^2 \operatorname{Sinh}[c]+8 a^2 f^3 \operatorname{Sinh}[c]+2 b^2 f^3 \operatorname{Sinh}[c]\right)+$$
$$\left.\left(4 a^2+b^2\right) \left(\frac{f^3 x^3 \operatorname{Cosh}[c]}{2 b^3 d}+\frac{f^3 x^3 \operatorname{Sinh}[c]}{2 b^3 d}\right)\right) \left(\operatorname{Cosh}[d x]+\operatorname{Sinh}[d x]\right)+$$
$$\left(\frac{a f^3 x^3 \operatorname{Cosh}[2 c]}{2 b^2 d}-\frac{a f^3 x^3 \operatorname{Sinh}[2 c]}{2 b^2 d}+\left(4 d^3 e^3+6 d^2 e^2 f+6 d e f^2+3 f^3\right)\right.$$
$$\left(\frac{a \operatorname{Cosh}[2 c]}{8 b^2 d^4}-\frac{a \operatorname{Sinh}[2 c]}{8 b^2 d^4}\right)+\left(2 a d^2 e^2 f+2 a d e f^2+a f^3\right)$$
$$\left.\left(\frac{3 x \operatorname{Cosh}[2 c]}{4 b^2 d^3}-\frac{3 x \operatorname{Sinh}[2 c]}{4 b^2 d^3}\right)+\left(2 a d e f^2+a f^3\right) \left(\frac{3 x^2 \operatorname{Cosh}[2 c]}{4 b^2 d^2}-\frac{3 x^2 \operatorname{Sinh}[2 c]}{4 b^2 d^2}\right)\right)$$
$$\left(\operatorname{Cosh}[2 d x]-\operatorname{Sinh}[2 d x]\right)+\left(-\frac{a f^3 x^3 \operatorname{Cosh}[2 c]}{2 b^2 d}-\frac{a f^3 x^3 \operatorname{Sinh}[2 c]}{2 b^2 d}+\right.$$
$$\left(4 d^3 e^3-6 d^2 e^2 f+6 d e f^2-3 f^3\right) \left(-\frac{a \operatorname{Cosh}[2 c]}{8 b^2 d^4}-\frac{a \operatorname{Sinh}[2 c]}{8 b^2 d^4}\right)-\frac{1}{4 b^2 d^2}$$
$$3 x^2 \left(2 a d e f^2 \operatorname{Cosh}[2 c]-a f^3 \operatorname{Cosh}[2 c]+2 a d e f^2 \operatorname{Sinh}[2 c]-a f^3 \operatorname{Sinh}[2 c]\right)-\frac{1}{4 b^2 d^3}$$
$$3 x \left(2 a d^2 e^2 f \operatorname{Cosh}[2 c]-2 a d e f^2 \operatorname{Cosh}[2 c]+a f^3 \operatorname{Cosh}[2 c]+2 a d^2 e^2 f \operatorname{Sinh}[2 c]-\right.$$
$$\left.\left.2 a d e f^2 \operatorname{Sinh}[2 c]+a f^3 \operatorname{Sinh}[2 c]\right)\right) \left(\operatorname{Cosh}[2 d x]+\operatorname{Sinh}[2 d x]\right)+$$
$$\left(\frac{f^3 x^3 \operatorname{Cosh}[3 c]}{6 b d}-\frac{f^3 x^3 \operatorname{Sinh}[3 c]}{6 b d}+\left(9 d^3 e^3+9 d^2 e^2 f+6 d e f^2+2 f^3\right) \left(\frac{\operatorname{Cosh}[3 c]}{54 b d^4}-\frac{\operatorname{Sinh}[3 c]}{54 b d^4}\right)+\right.$$
$$\left(-9 d^2 e^2 f-6 d e f^2-2 f^3\right) \left(-\frac{x \operatorname{Cosh}[3 c]}{18 b d^3}+\frac{x \operatorname{Sinh}[3 c]}{18 b d^3}\right)+$$
$$\left.\left(-3 d e f^2-f^3\right) \left(-\frac{x^2 \operatorname{Cosh}[3 c]}{6 b d^2}+\frac{x^2 \operatorname{Sinh}[3 c]}{6 b d^2}\right)\right) \left(\operatorname{Cosh}[3 d x]-\operatorname{Sinh}[3 d x]\right)+$$
$$\left(\frac{f^3 x^3 \operatorname{Cosh}[3 c]}{6 b d}+\frac{f^3 x^3 \operatorname{Sinh}[3 c]}{6 b d}+\left(9 d^3 e^3-9 d^2 e^2 f+6 d e f^2-2 f^3\right) \left(\frac{\operatorname{Cosh}[3 c]}{54 b d^4}+\frac{\operatorname{Sinh}[3 c]}{54 b d^4}\right)+\right.$$
$$\frac{1}{6 b d^2} x^2 \left(3 d e f^2 \operatorname{Cosh}[3 c]-f^3 \operatorname{Cosh}[3 c]+3 d e f^2 \operatorname{Sinh}[3 c]-f^3 \operatorname{Sinh}[3 c]\right)+$$
$$\frac{1}{18 b d^3} x \left(9 d^2 e^2 f \operatorname{Cosh}[3 c]-6 d e f^2 \operatorname{Cosh}[3 c]+2 f^3 \operatorname{Cosh}[3 c]+9 d^2 e^2 f \operatorname{Sinh}[3 c]-\right.$$

$$6 d e f^2 \operatorname{Sinh}[3 c] + 2 f^3 \operatorname{Sinh}[3 c]\Big)\Big) \left(\operatorname{Cosh}[3 d x] + \operatorname{Sinh}[3 d x]\right)\Big)$$

Problem 369: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \operatorname{Cosh}[c+d x]^2 \operatorname{Sinh}[c+d x]^2}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 403 leaves, 19 steps):

$$-\frac{a^3 e x}{b^4}-\frac{a e x}{2 b^2}-\frac{a^3 f x^2}{2 b^4}-\frac{a f x^2}{4 b^2}+\frac{a^2 (e+f x) \operatorname{Cosh}[c+d x]}{b^3 d}+\frac{a f \operatorname{Cosh}[c+d x]^2}{4 b^2 d^2}+\frac{(e+f x) \operatorname{Cosh}[c+d x]^3}{3 b d}+\frac{a^2 \sqrt{a^2+b^2} (e+f x) \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{a^2 \sqrt{a^2+b^2} (e+f x) \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d}+\frac{a^2 \sqrt{a^2+b^2} f \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^2}-\frac{a^2 \sqrt{a^2+b^2} f \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^2}-\frac{a^2 f \operatorname{Sinh}[c+d x]}{b^3 d^2}-\frac{f \operatorname{Sinh}[c+d x]}{3 b d^2}-\frac{a (e+f x) \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{2 b^2 d}-\frac{f \operatorname{Sinh}[c+d x]^3}{9 b d^2}$$

Result (type 4, 1373 leaves):

$$\frac{1}{72 b^4 \sqrt{-\left(a^2+b^2\right)^2} d^2}\Bigg(-72 a^3 \sqrt{-\left(a^2+b^2\right)^2} c d e-36 a b^2 \sqrt{-\left(a^2+b^2\right)^2} c d e+36 a^3 \sqrt{-\left(a^2+b^2\right)^2} c^2 f+18 a b^2 \sqrt{-\left(a^2+b^2\right)^2} c^2 f-72 a^3 \sqrt{-\left(a^2+b^2\right)^2} d^2 e x-36 a b^2 \sqrt{-\left(a^2+b^2\right)^2} d^2 e x-36 a^3 \sqrt{-\left(a^2+b^2\right)^2} d^2 f x^2-18 a b^2 \sqrt{-\left(a^2+b^2\right)^2} d^2 f x^2+144 a^4 \sqrt{a^2+b^2} d e \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]+144 a^2 b^2 \sqrt{a^2+b^2} d e \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]-144 a^4 \sqrt{a^2+b^2} c f \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]-144 a^2 b^2 \sqrt{a^2+b^2} c f \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]+$$

$$72\, a^2\, b \sqrt{-\left(a^2+b^2\right)^2}\; d\, e\, \text{Cosh}[c+d\, x] + 18\, b^3 \sqrt{-\left(a^2+b^2\right)^2}\; d\, e\, \text{Cosh}[c+d\, x] +$$
$$72\, a^2\, b \sqrt{-\left(a^2+b^2\right)^2}\; d\, f\, x\, \text{Cosh}[c+d\, x] + 18\, b^3 \sqrt{-\left(a^2+b^2\right)^2}\; d\, f\, x\, \text{Cosh}[c+d\, x] +$$
$$9\, a\, b^2 \sqrt{-\left(a^2+b^2\right)^2}\; f\, \text{Cosh}\left[2\,(c+d\, x)\right] + 6\, b^3 \sqrt{-\left(a^2+b^2\right)^2}\; d\, e\, \text{Cosh}\left[3\,(c+d\, x)\right] +$$
$$6\, b^3 \sqrt{-\left(a^2+b^2\right)^2}\; d\, f\, x\, \text{Cosh}\left[3\,(c+d\, x)\right] +$$
$$72\, a^4 \sqrt{-a^2-b^2}\; c\, f\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a-\sqrt{a^2+b^2}}\right] +$$
$$72\, a^2\, b^2 \sqrt{-a^2-b^2}\; c\, f\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a-\sqrt{a^2+b^2}}\right] +$$
$$72\, a^4 \sqrt{-a^2-b^2}\; d\, f\, x\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a-\sqrt{a^2+b^2}}\right] +$$
$$72\, a^2\, b^2 \sqrt{-a^2-b^2}\; d\, f\, x\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a-\sqrt{a^2+b^2}}\right] -$$
$$72\, a^4 \sqrt{-a^2-b^2}\; c\, f\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a+\sqrt{a^2+b^2}}\right] -$$
$$72\, a^2\, b^2 \sqrt{-a^2-b^2}\; c\, f\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a+\sqrt{a^2+b^2}}\right] -$$
$$72\, a^4 \sqrt{-a^2-b^2}\; d\, f\, x\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a+\sqrt{a^2+b^2}}\right] -$$
$$72\, a^2\, b^2 \sqrt{-a^2-b^2}\; d\, f\, x\, \text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a+\sqrt{a^2+b^2}}\right] -$$
$$72\, a^2\,\left(-a^2-b^2\right)^{3/2} f\, \text{PolyLog}\left[2,\, \frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{-a+\sqrt{a^2+b^2}}\right] +$$
$$72\, a^2\,\left(-a^2-b^2\right)^{3/2} f\, \text{PolyLog}\left[2,\, -\frac{b\,(\text{Cosh}[c+d\, x]+\text{Sinh}[c+d\, x])}{a+\sqrt{a^2+b^2}}\right] -$$
$$72\, a^2\, b \sqrt{-\left(a^2+b^2\right)^2}\; f\, \text{Sinh}[c+d\, x] - 18\, b^3 \sqrt{-\left(a^2+b^2\right)^2}\; f\, \text{Sinh}[c+d\, x] -$$
$$18\, a\, b^2 \sqrt{-\left(a^2+b^2\right)^2}\; d\, e\, \text{Sinh}\left[2\,(c+d\, x)\right] -$$
$$18\, a\, b^2 \sqrt{-\left(a^2+b^2\right)^2}\; d\, f\, x\, \text{Sinh}\left[2\,(c+d\, x)\right] - 2\, b^3 \sqrt{-\left(a^2+b^2\right)^2}\; f\, \text{Sinh}\left[3\,(c+d\, x)\right]\Bigg)$$

Problem 371: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d x]^2 \,\text{Sinh}[c+d x]^2}{(e+f x)\,(a+b\,\text{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d x]^2 \,\text{Sinh}[c+d x]^2}{(e+f x)\,(a+b\,\text{Sinh}[c+d x])},\, x\right]$$

Result (type 1, 1 leaves):

???

Problem 372: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \,\text{Cosh}[c+d x]^3 \,\text{Sinh}[c+d x]^2}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 1123 leaves, 40 steps):

$$\frac{3 a^2 f^3 x}{8 b^3 d^3}-\frac{45 f^3 x}{256 b d^3}+\frac{a^2 (e+f x)^3}{4 b^3 d}-\frac{3 (e+f x)^3}{32 b d}-\frac{a^2 (a^2+b^2) (e+f x)^4}{4 b^5 f}+\frac{6 a^3 f^3 \text{Cosh}[c+d x]}{b^4 d^4}+$$
$$\frac{40 a f^3 \text{Cosh}[c+d x]}{9 b^2 d^4}+\frac{3 a^3 f (e+f x)^2 \text{Cosh}[c+d x]}{b^4 d^2}+\frac{2 a f (e+f x)^2 \text{Cosh}[c+d x]}{b^2 d^2}+$$
$$\frac{9 f^2 (e+f x) \text{Cosh}[c+d x]^2}{32 b d^3}+\frac{2 a f^3 \text{Cosh}[c+d x]^3}{27 b^2 d^4}+\frac{a f (e+f x)^2 \text{Cosh}[c+d x]^3}{3 b^2 d^2}+$$
$$\frac{3 f^2 (e+f x) \text{Cosh}[c+d x]^4}{32 b d^3}+\frac{(e+f x)^3 \text{Cosh}[c+d x]^4}{4 b d}+\frac{a^2 (a^2+b^2) (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d}+$$
$$\frac{a^2 (a^2+b^2) (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d}+\frac{3 a^2 (a^2+b^2) f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^2}+$$
$$\frac{3 a^2 (a^2+b^2) f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^2}-$$
$$\frac{6 a^2 (a^2+b^2) f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^3}-$$
$$\frac{6 a^2 (a^2+b^2) f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^3}+\frac{6 a^2 (a^2+b^2) f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^4}+$$
$$\frac{6 a^2 (a^2+b^2) f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^4}-\frac{6 a^3 f^2 (e+f x) \text{Sinh}[c+d x]}{b^4 d^3}-$$
$$\frac{40 a f^2 (e+f x) \text{Sinh}[c+d x]}{9 b^2 d^3}-\frac{a^3 (e+f x)^3 \text{Sinh}[c+d x]}{b^4 d}-\frac{2 a (e+f x)^3 \text{Sinh}[c+d x]}{3 b^2 d}-$$
$$\frac{3 a^2 f^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{8 b^3 d^4}-\frac{45 f^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{256 b d^4}-$$
$$\frac{3 a^2 f (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b^3 d^2}-\frac{9 f (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{32 b d^2}-$$
$$\frac{2 a f^2 (e+f x) \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{9 b^2 d^3}-\frac{a (e+f x)^3 \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{3 b^2 d}-$$
$$\frac{3 f^3 \text{Cosh}[c+d x]^3 \text{Sinh}[c+d x]}{128 b d^4}-\frac{3 f (e+f x)^2 \text{Cosh}[c+d x]^3 \text{Sinh}[c+d x]}{16 b d^2}+$$
$$\frac{3 a^2 f^2 (e+f x) \text{Sinh}[c+d x]^2}{4 b^3 d^3}+\frac{a^2 (e+f x)^3 \text{Sinh}[c+d x]^2}{2 b^3 d}$$

Result (type 4, 7906 leaves):

$$-\frac{e^3 \text{Log}[a+b \text{Sinh}[c+d x]]}{8 b d}-\frac{1}{8 b d^2}$$

$$3 e^2 f \left(-\frac{1}{8} \left(2 c + i \pi + 2 d x\right)^2 - 4 \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{\left(a + i b\right) \text{Cot}\left[\frac{1}{4} \left(2 i c + \pi + 2 i d x\right)\right]}{\sqrt{a^2 + b^2}}\right] + \right.$$

$$\frac{1}{2} \left(2 c + i \pi + 2 d x + 4 i \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1 + \frac{\left(-a + \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right] +$$

$$\frac{1}{2} \left(2 c + i \pi + 2 d x - 4 i \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1 - \frac{\left(a + \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right] -$$

$$\frac{1}{2} i \pi \text{Log}\left[a + b \text{Sinh}\left[c + d x\right]\right] - c \text{Log}\left[1 + \frac{b \text{Sinh}\left[c + d x\right]}{a}\right] +$$

$$\left. \text{PolyLog}\left[2, \frac{\left(a - \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right] + \text{PolyLog}\left[2, \frac{\left(a + \sqrt{a^2 + b^2}\right) e^{c+d x}}{b}\right]\right) - \frac{1}{8 b d^3}$$

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

$$6 d x \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] + 6 d x \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] -$$

$$\left. 6 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] - 6 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right]\right) -$$

$$\frac{1}{32 b d^4} f^3 \left(-d^4 x^4 + 4 d^3 x^3 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] + 4 d^3 x^3 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] + \right.$$

$$12 d^2 x^2 \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] + 12 d^2 x^2 \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] -$$

$$24 d x \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] - 24 d x \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] +$$

$$\left. 24 \text{PolyLog}\left[4, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right] + 24 \text{PolyLog}\left[4, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2 + b^2\right) e^{2 c}}}\right]\right) +$$

$$\frac{1}{32\,b^3}\,e\,f^2\left(2\left(4\,a^2+b^2\right)x^3\,\mathrm{Coth}[c]-\frac{1}{d^3\left(-1+e^{2\,c}\right)}\right.$$

$$2\left(4\,a^2+b^2\right)\left(2\,d^3\,e^{2\,c}\,x^3+3\,d^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-\right.$$

$$3\,d^2\,e^{2\,c}\,x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+3\,d^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$3\,d^2\,e^{2\,c}\,x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d\left(-1+e^{2\,c}\right)x\,\mathrm{PolyLog}\left[2,\right.$$

$$\left.-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d\left(-1+e^{2\,c}\right)x\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$\left.6\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)-$$

$$\frac{24\,a\,b\,\mathrm{Cosh}[d\,x]\left(-2\,d\,x\,\mathrm{Cosh}[c]+\left(2+d^2\,x^2\right)\mathrm{Sinh}[c]\right)}{d^3}+$$

$$\frac{3\,b^2\,\mathrm{Cosh}[2\,d\,x]\left(\left(1+2\,d^2\,x^2\right)\mathrm{Cosh}[2\,c]-2\,d\,x\,\mathrm{Sinh}[2\,c]\right)}{d^3}-$$

$$\frac{24\,a\,b\left(\left(2+d^2\,x^2\right)\mathrm{Cosh}[c]-2\,d\,x\,\mathrm{Sinh}[c]\right)\mathrm{Sinh}[d\,x]}{d^3}+$$

$$\left.\frac{3\,b^2\left(-2\,d\,x\,\mathrm{Cosh}[2\,c]+\left(1+2\,d^2\,x^2\right)\mathrm{Sinh}[2\,c]\right)\mathrm{Sinh}[2\,d\,x]}{d^3}\right)+$$

$$\frac{1}{64\,b^3}\,f^3\left(\left(4\,a^2+b^2\right)x^4\,\mathrm{Coth}[c]-\frac{1}{d^4\left(-1+e^{2\,c}\right)}\,2\left(4\,a^2+b^2\right)\left(d^4\,e^{2\,c}\,x^4+\right.\right.$$

$$2\,d^3\,x^3\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,x^3\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$2\,d^3\,x^3\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,x^3\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,d^2\left(-1+e^{2\,c}\right)x^2\,\mathrm{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\left(-1+e^{2\,c}\right)x^2$$

$$\mathrm{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,x\,\mathrm{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,d\,e^{2c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,d\,x$$

$$\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+12\,d\,e^{2c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$12\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,e^{2c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$12\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,e^{2c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]\Bigg)-$$

$$\frac{1}{d^4}16\,a\,b\,\text{Cosh}[d\,x]\left(-3\left(2+d^2x^2\right)\text{Cosh}[c]+d\,x\left(6+d^2x^2\right)\text{Sinh}[c]\right)+\frac{1}{d^4}$$

$$b^2\,\text{Cosh}[2\,d\,x]\left(2\,d\,x\left(3+2\,d^2x^2\right)\text{Cosh}[2\,c]-3\left(1+2\,d^2x^2\right)\text{Sinh}[2\,c]\right)-$$

$$\frac{16\,a\,b\left(d\,x\left(6+d^2x^2\right)\text{Cosh}[c]-3\left(2+d^2x^2\right)\text{Sinh}[c]\right)\text{Sinh}[d\,x]}{d^4}+\frac{1}{d^4}$$

$$b^2\left(-3\left(1+2\,d^2x^2\right)\text{Cosh}[2\,c]+2\,d\,x\left(3+2\,d^2x^2\right)\text{Sinh}[2\,c]\right)\text{Sinh}[2\,d\,x]\Bigg)+$$

$$\frac{1}{4608\,b^5\,d^3}\,e\,e^{-4c}\,f^2\Bigg(-4608\,a^4\,d^3\,e^{4c}\,x^3-3456\,a^2\,b^2\,d^3\,e^{4c}\,x^3-288\,b^4\,d^3\,e^{4c}\,x^3+$$

$$13824\,a^3\,b\,e^{3c}\,\text{Cosh}[d\,x]+6912\,a\,b^3\,e^{3c}\,\text{Cosh}[d\,x]-13824\,a^3\,b\,e^{5c}\,\text{Cosh}[d\,x]-$$
$$6912\,a\,b^3\,e^{5c}\,\text{Cosh}[d\,x]+13824\,a^3\,b\,d\,e^{3c}\,x\,\text{Cosh}[d\,x]+6912\,a\,b^3\,d\,e^{3c}\,x\,\text{Cosh}[d\,x]+$$
$$13824\,a^3\,b\,d\,e^{5c}\,x\,\text{Cosh}[d\,x]+6912\,a\,b^3\,d\,e^{5c}\,x\,\text{Cosh}[d\,x]+6912\,a^3\,b\,d^2\,e^{3c}\,x^2\,\text{Cosh}[d\,x]+$$
$$3456\,a\,b^3\,d^2\,e^{3c}\,x^2\,\text{Cosh}[d\,x]-6912\,a^3\,b\,d^2\,e^{5c}\,x^2\,\text{Cosh}[d\,x]-3456\,a\,b^3\,d^2\,e^{5c}\,x^2\,\text{Cosh}[d\,x]+$$
$$864\,a^2\,b^2\,e^{2c}\,\text{Cosh}[2\,d\,x]+216\,b^4\,e^{2c}\,\text{Cosh}[2\,d\,x]+864\,a^2\,b^2\,e^{6c}\,\text{Cosh}[2\,d\,x]+$$
$$216\,b^4\,e^{6c}\,\text{Cosh}[2\,d\,x]+1728\,a^2\,b^2\,d\,e^{2c}\,x\,\text{Cosh}[2\,d\,x]+432\,b^4\,d\,e^{2c}\,x\,\text{Cosh}[2\,d\,x]-$$
$$1728\,a^2\,b^2\,d\,e^{6c}\,x\,\text{Cosh}[2\,d\,x]-432\,b^4\,d\,e^{6c}\,x\,\text{Cosh}[2\,d\,x]+1728\,a^2\,b^2\,d^2\,e^{2c}\,x^2\,\text{Cosh}[2\,d\,x]+$$
$$432\,b^4\,d^2\,e^{2c}\,x^2\,\text{Cosh}[2\,d\,x]+1728\,a^2\,b^2\,d^2\,e^{6c}\,x^2\,\text{Cosh}[2\,d\,x]+$$
$$432\,b^4\,d^2\,e^{6c}\,x^2\,\text{Cosh}[2\,d\,x]+128\,a\,b^3\,e^{c}\,\text{Cosh}[3\,d\,x]-128\,a\,b^3\,e^{7c}\,\text{Cosh}[3\,d\,x]+$$
$$384\,a\,b^3\,d\,e^{c}\,x\,\text{Cosh}[3\,d\,x]+384\,a\,b^3\,d\,e^{7c}\,x\,\text{Cosh}[3\,d\,x]+576\,a\,b^3\,d^2\,e^{c}\,x^2\,\text{Cosh}[3\,d\,x]-$$
$$576\,a\,b^3\,d^2\,e^{7c}\,x^2\,\text{Cosh}[3\,d\,x]+27\,b^4\,\text{Cosh}[4\,d\,x]+27\,b^4\,e^{8c}\,\text{Cosh}[4\,d\,x]+$$
$$108\,b^4\,d\,x\,\text{Cosh}[4\,d\,x]-108\,b^4\,d\,e^{8c}\,x\,\text{Cosh}[4\,d\,x]+216\,b^4\,d^2\,x^2\,\text{Cosh}[4\,d\,x]+$$

$$216\,b^4\,d^2\,e^{8c}\,x^2\,\text{Cosh}[4\,d\,x]+13824\,a^4\,d^2\,e^{4c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$10368\,a^2\,b^2\,d^2\,e^{4c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$864\,b^4\,d^2\,e^{4c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$13824\,a^4\,d^2\,e^{4c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$10368\,a^2\,b^2\,d^2\,e^{4\,c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$864\,b^4\,d^2\,e^{4\,c}\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$1728\,\left(16\,a^4+12\,a^2\,b^2+b^4\right)\,d\,e^{4\,c}\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$1728\,\left(16\,a^4+12\,a^2\,b^2+b^4\right)\,d\,e^{4\,c}\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$27648\,a^4\,e^{4\,c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$20736\,a^2\,b^2\,e^{4\,c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$1728\,b^4\,e^{4\,c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$27648\,a^4\,e^{4\,c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$20736\,a^2\,b^2\,e^{4\,c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$1728\,b^4\,e^{4\,c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-13824\,a^3\,b\,e^{3\,c}\,\text{Sinh}[d\,x]-$$

$$6912\,a\,b^3\,e^{3\,c}\,\text{Sinh}[d\,x]-13824\,a^3\,b\,e^{5\,c}\,\text{Sinh}[d\,x]-6912\,a\,b^3\,e^{5\,c}\,\text{Sinh}[d\,x]-$$
$$13824\,a^3\,b\,d\,e^{3\,c}\,x\,\text{Sinh}[d\,x]-6912\,a\,b^3\,d\,e^{3\,c}\,x\,\text{Sinh}[d\,x]+13824\,a^3\,b\,d\,e^{5\,c}\,x\,\text{Sinh}[d\,x]+$$
$$6912\,a\,b^3\,d\,e^{5\,c}\,x\,\text{Sinh}[d\,x]-6912\,a^3\,b\,d^2\,e^{3\,c}\,x^2\,\text{Sinh}[d\,x]-3456\,a\,b^3\,d^2\,e^{3\,c}\,x^2\,\text{Sinh}[d\,x]-$$
$$6912\,a^3\,b\,d^2\,e^{5\,c}\,x^2\,\text{Sinh}[d\,x]-3456\,a\,b^3\,d^2\,e^{5\,c}\,x^2\,\text{Sinh}[d\,x]-864\,a^2\,b^2\,e^{2\,c}\,\text{Sinh}[2\,d\,x]-$$
$$216\,b^4\,e^{2\,c}\,\text{Sinh}[2\,d\,x]+864\,a^2\,b^2\,e^{6\,c}\,\text{Sinh}[2\,d\,x]+216\,b^4\,e^{6\,c}\,\text{Sinh}[2\,d\,x]-$$
$$1728\,a^2\,b^2\,d\,e^{2\,c}\,x\,\text{Sinh}[2\,d\,x]-432\,b^4\,d\,e^{2\,c}\,x\,\text{Sinh}[2\,d\,x]-1728\,a^2\,b^2\,d\,e^{6\,c}\,x\,\text{Sinh}[2\,d\,x]-$$
$$432\,b^4\,d\,e^{6\,c}\,x\,\text{Sinh}[2\,d\,x]-1728\,a^2\,b^2\,d^2\,e^{2\,c}\,x^2\,\text{Sinh}[2\,d\,x]-432\,b^4\,d^2\,e^{2\,c}\,x^2\,\text{Sinh}[2\,d\,x]+$$
$$1728\,a^2\,b^2\,d^2\,e^{6\,c}\,x^2\,\text{Sinh}[2\,d\,x]+432\,b^4\,d^2\,e^{6\,c}\,x^2\,\text{Sinh}[2\,d\,x]-128\,a\,b^3\,e^{c}\,\text{Sinh}[3\,d\,x]-$$
$$128\,a\,b^3\,e^{7\,c}\,\text{Sinh}[3\,d\,x]-384\,a\,b^3\,d\,e^{c}\,x\,\text{Sinh}[3\,d\,x]+384\,a\,b^3\,d\,e^{7\,c}\,x\,\text{Sinh}[3\,d\,x]-$$
$$576\,a\,b^3\,d^2\,e^{c}\,x^2\,\text{Sinh}[3\,d\,x]-576\,a\,b^3\,d^2\,e^{7\,c}\,x^2\,\text{Sinh}[3\,d\,x]-27\,b^4\,\text{Sinh}[4\,d\,x]+$$
$$27\,b^4\,e^{8\,c}\,\text{Sinh}[4\,d\,x]-108\,b^4\,d\,x\,\text{Sinh}[4\,d\,x]-108\,b^4\,d\,e^{8\,c}\,x\,\text{Sinh}[4\,d\,x]-$$

$$\left.216\,b^4\,d^2\,x^2\,\text{Sinh}[4\,d\,x]+216\,b^4\,d^2\,e^{8\,c}\,x^2\,\text{Sinh}[4\,d\,x]\right)+\frac{1}{16\,b^3\,d}$$

$$e^3\,\left(b^2\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]+\left(4\,a^2+b^2\right)\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]-4\,a\,b\,\text{Sinh}[c+d\,x]\right)+$$

$$\frac{1}{32\,b^3\,d^2}$$

$$3\,e^2\,f$$

$$\Bigg(8\,a\,b\,\text{Cosh}[c+d\,x]+2\,b^2\,d\,x\,\text{Cosh}\big[2\,(c+d\,x)\big]-$$

$$8\,a^2\,c\,\text{Log}\Big[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\Big]-2\,b^2\,c\,\text{Log}\Big[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\Big]+8\,a^2$$

$$\Bigg(-\frac{1}{8}\,(2\,c+i\,\pi+2\,d\,x)^2-4\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\,\text{ArcTan}\Big[\frac{(a+i\,b)\,\text{Cot}\big[\frac{1}{4}\,(2\,i\,c+\pi+2\,i\,d\,x)\big]}{\sqrt{a^2+b^2}}\Big]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\right)\text{Log}\Big[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\right)\text{Log}\Big[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\Big[2,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$

$$\text{PolyLog}\Big[2,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]\Bigg)+2\,b^2$$

$$\Bigg(-\frac{1}{8}\,(2\,c+i\,\pi+2\,d\,x)^2-4\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\,\text{ArcTan}\Big[\frac{(a+i\,b)\,\text{Cot}\big[\frac{1}{4}\,(2\,i\,c+\pi+2\,i\,d\,x)\big]}{\sqrt{a^2+b^2}}\Big]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\right)\text{Log}\Big[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\left.\text{PolyLog}\left[2,\,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]\right)-8\,a\,b\,d\,x\,\text{Sinh}[c+d\,x]-b^2\,\text{Sinh}[2\,(c+d\,x)]\right)+$$

$$\frac{1}{96\,b^5\,d}e^3\,\left(6\,b^2\,\left(4\,a^2+b^2\right)\,\text{Cosh}[2\,(c+d\,x)]+3\,b^4\,\text{Cosh}[4\,(c+d\,x)]+\right.$$
$$6\,\left(16\,a^4+12\,a^2\,b^2+b^4\right)\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]-$$
$$\left.48\,a\,b\,\left(2\,a^2+b^2\right)\,\text{Sinh}[c+d\,x]-8\,a\,b^3\,\text{Sinh}[3\,(c+d\,x)]\right)+$$

$$\frac{1}{384\,b^5\,d^2}\,e^2\,f\,\left(576\,a\,b\,\left(2\,a^2+b^2\right)\,\text{Cosh}[c+d\,x]+72\,b^2\,\left(4\,a^2+b^2\right)\,d\,x\,\text{Cosh}[2\,(c+d\,x)]+\right.$$

$$32\,a\,b^3\,\text{Cosh}[3\,(c+d\,x)]+36\,b^4\,d\,x\,\text{Cosh}[4\,(c+d\,x)]-1152\,a^4\,c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]-$$

$$864\,a^2\,b^2\,c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]-72\,b^4\,c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]+1152\,a^4$$

$$\left(-\frac{1}{8}\,\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{\left(a+\mathrm{i}\,b\right)\,\text{Cot}\left[\frac{1}{4}\,\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)+864\,a^2\,b^2$$

$$\left(-\frac{1}{8}\left(2\,c+i\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{\left(a+i\,b\right)\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)+72\,b^4$$

$$\left(-\frac{1}{8}\left(2\,c+i\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{\left(a+i\,b\right)\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)-576\,a\,b\,\left(2\,a^2+b^2\right)\,d\,x\,\text{Sinh}[c+d\,x]-$$

$$\left.36\,b^2\,\left(4\,a^2+b^2\right)\,\text{Sinh}[2\,(c+d\,x)]-96\,a\,b^3\,d\,x\,\text{Sinh}[3\,(c+d\,x)]-9\,b^4\,\text{Sinh}[4\,(c+d\,x)]\right)+$$

$$\frac{1}{55\,296\,b^5}f^3\left(864\,\left(16\,a^4+12\,a^2\,b^2+b^4\right)\,x^4\,\text{Coth}[c]-\frac{1}{d^4\,\left(-1+e^{2\,c}\right)}\right.$$

$$1728\,\left(16\,a^4+12\,a^2\,b^2+b^4\right)\,\left(d^4\,e^{2\,c}\,x^4+2\,d^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,x^3\right.$$

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

$$\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,\left(-1+e^{2\,c}\right)\,x^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,x^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,x\,\text{PolyLog}\left[3,\right.$$

$$\left.-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,x$$

$$\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$\left.12\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)+$$

$$\frac{1}{d^4}13\,824\,a\,b\,\left(2\,a^2+b^2\right)\,\left(6+6\,d\,x+3\,d^2\,x^2+d^3\,x^3\right)\,\left(\text{Cosh}[c+d\,x]-\text{Sinh}[c+d\,x]\right)-$$

$$\frac{1}{d^4}13\,824\,a\,b\,\left(2\,a^2+b^2\right)\,\left(-6+6\,d\,x-3\,d^2\,x^2+d^3\,x^3\right)\,\left(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]\right)+\frac{1}{d^4}$$

$$432\,b^2\,\left(4\,a^2+b^2\right)\,\left(3+6\,d\,x+6\,d^2\,x^2+4\,d^3\,x^3\right)\,\left(\text{Cosh}[2\,(c+d\,x)]-\text{Sinh}[2\,(c+d\,x)]\right)+\frac{1}{d^4}$$

$$432\,b^2\,\left(4\,a^2+b^2\right)\,\left(-3+6\,d\,x-6\,d^2\,x^2+4\,d^3\,x^3\right)\,\left(\text{Cosh}\left[2\,\left(c+d\,x\right)\right]+\text{Sinh}\left[2\,\left(c+d\,x\right)\right]\right)+$$
$$\frac{1}{d^4}256\,a\,b^3\,\left(2+6\,d\,x+9\,d^2\,x^2+9\,d^3\,x^3\right)\,\left(\text{Cosh}\left[3\,\left(c+d\,x\right)\right]-\text{Sinh}\left[3\,\left(c+d\,x\right)\right]\right)-$$
$$\frac{1}{d^4}256\,a\,b^3\,\left(-2+6\,d\,x-9\,d^2\,x^2+9\,d^3\,x^3\right)\,\left(\text{Cosh}\left[3\,\left(c+d\,x\right)\right]+\text{Sinh}\left[3\,\left(c+d\,x\right)\right]\right)+$$
$$\frac{1}{d^4}27\,b^4\,\left(3+12\,d\,x+24\,d^2\,x^2+32\,d^3\,x^3\right)\,\left(\text{Cosh}\left[4\,\left(c+d\,x\right)\right]-\text{Sinh}\left[4\,\left(c+d\,x\right)\right]\right)+$$
$$\left.\frac{1}{d^4}27\,b^4\,\left(-3+12\,d\,x-24\,d^2\,x^2+32\,d^3\,x^3\right)\,\left(\text{Cosh}\left[4\,\left(c+d\,x\right)\right]+\text{Sinh}\left[4\,\left(c+d\,x\right)\right]\right)\right)$$

Problem 373: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^2\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 819 leaves, 28 steps):

$$\frac{a^2\,e\,f\,x}{2\,b^3\,d}-\frac{3\,e\,f\,x}{16\,b\,d}+\frac{a^2\,f^2\,x^2}{4\,b^3\,d}-\frac{3\,f^2\,x^2}{32\,b\,d}-\frac{a^2\,\left(a^2+b^2\right)\,\left(e+f\,x\right)^3}{3\,b^5\,f}+\frac{2\,a^3\,f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]}{b^4\,d^2}+$$
$$\frac{4\,a\,f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]}{3\,b^2\,d^2}+\frac{3\,f^2\,\text{Cosh}[c+d\,x]^2}{32\,b\,d^3}+\frac{2\,a\,f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]^3}{9\,b^2\,d^2}+$$
$$\frac{f^2\,\text{Cosh}[c+d\,x]^4}{32\,b\,d^3}+\frac{\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]^4}{4\,b\,d}+\frac{a^2\,\left(a^2+b^2\right)\,\left(e+f\,x\right)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d}+$$
$$\frac{a^2\,\left(a^2+b^2\right)\,\left(e+f\,x\right)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d}+\frac{2\,a^2\,\left(a^2+b^2\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d^2}+$$
$$\frac{2\,a^2\,\left(a^2+b^2\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d^2}-\frac{2\,a^2\,\left(a^2+b^2\right)\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d^3}-$$
$$\frac{2\,a^2\,\left(a^2+b^2\right)\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d^3}-\frac{2\,a^3\,f^2\,\text{Sinh}[c+d\,x]}{b^4\,d^3}-$$
$$\frac{14\,a\,f^2\,\text{Sinh}[c+d\,x]}{9\,b^2\,d^3}-\frac{a^3\,\left(e+f\,x\right)^2\,\text{Sinh}[c+d\,x]}{b^4\,d}-\frac{2\,a\,\left(e+f\,x\right)^2\,\text{Sinh}[c+d\,x]}{3\,b^2\,d}-$$
$$\frac{a^2\,f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{2\,b^3\,d^2}-\frac{3\,f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{16\,b\,d^2}-$$
$$\frac{a\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]}{3\,b^2\,d}-\frac{f\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{8\,b\,d^2}+$$
$$\frac{a^2\,f^2\,\text{Sinh}[c+d\,x]^2}{4\,b^3\,d^3}+\frac{a^2\,\left(e+f\,x\right)^2\,\text{Sinh}[c+d\,x]^2}{2\,b^3\,d}-\frac{2\,a\,f^2\,\text{Sinh}[c+d\,x]^3}{27\,b^2\,d^3}$$

Result (type 4, 5436 leaves):

$$-\frac{e^2 \,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]}{8\,b\,d}-\frac{1}{4\,b\,d^2}$$

$$e\,f\left(-\frac{1}{8}\left(2\,c+i\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]-c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]+$$

$$\left.\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)-\frac{1}{24\,b\,d^3}$$

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

$$6\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]+6\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]-$$

$$\left.6\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]-6\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\right]\right)+$$

$$\frac{1}{96\,b^3}\,f^2\left(2\,(4\,a^2+b^2)\,x^3\,\text{Coth}[c]-\frac{1}{d^3\,(-1+e^{2\,c})}\right.$$

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

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

$$3\,d^2\,e^{2\,c}\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]-6\,d\,\left(-1+e^{2\,c}\right)\,x\,\text{PolyLog}\Big[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]-6\,d\,\left(-1+e^{2\,c}\right)\,x\,\text{PolyLog}\Big[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]-$$

$$6\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]+6\,e^{2\,c}\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]-$$

$$6\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]+6\,e^{2\,c}\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]\Bigg)-$$

$$\frac{24\,a\,b\,\text{Cosh}[d\,x]\,\left(-2\,d\,x\,\text{Cosh}[c]+\left(2+d^2\,x^2\right)\,\text{Sinh}[c]\right)}{d^3}+$$

$$\frac{3\,b^2\,\text{Cosh}[2\,d\,x]\,\left(\left(1+2\,d^2\,x^2\right)\,\text{Cosh}[2\,c]-2\,d\,x\,\text{Sinh}[2\,c]\right)}{d^3}-$$

$$\frac{24\,a\,b\,\left(\left(2+d^2\,x^2\right)\,\text{Cosh}[c]-2\,d\,x\,\text{Sinh}[c]\right)\,\text{Sinh}[d\,x]}{d^3}+$$

$$\frac{3\,b^2\,\left(-2\,d\,x\,\text{Cosh}[2\,c]+\left(1+2\,d^2\,x^2\right)\,\text{Sinh}[2\,c]\right)\,\text{Sinh}[2\,d\,x]}{d^3}\Bigg)+$$

$$\frac{1}{13\,824\,b^5\,d^3}\,e^{-4\,c}\,f^2\,\Bigg(-4608\,a^4\,d^3\,e^{4\,c}\,x^3-3456\,a^2\,b^2\,d^3\,e^{4\,c}\,x^3-288\,b^4\,d^3\,e^{4\,c}\,x^3+$$

$$13\,824\,a^3\,b\,e^{3\,c}\,\text{Cosh}[d\,x]+6912\,a\,b^3\,e^{3\,c}\,\text{Cosh}[d\,x]-13\,824\,a^3\,b\,e^{5\,c}\,\text{Cosh}[d\,x]-$$
$$6912\,a\,b^3\,e^{5\,c}\,\text{Cosh}[d\,x]+13\,824\,a^3\,b\,d\,e^{3\,c}\,x\,\text{Cosh}[d\,x]+6912\,a\,b^3\,d\,e^{3\,c}\,x\,\text{Cosh}[d\,x]+$$
$$13\,824\,a^3\,b\,d\,e^{5\,c}\,x\,\text{Cosh}[d\,x]+6912\,a\,b^3\,d\,e^{5\,c}\,x\,\text{Cosh}[d\,x]+6912\,a^3\,b\,d^2\,e^{3\,c}\,x^2\,\text{Cosh}[d\,x]+$$
$$3456\,a\,b^3\,d^2\,e^{3\,c}\,x^2\,\text{Cosh}[d\,x]-6912\,a^3\,b\,d^2\,e^{5\,c}\,x^2\,\text{Cosh}[d\,x]-3456\,a\,b^3\,d^2\,e^{5\,c}\,x^2\,\text{Cosh}[d\,x]+$$
$$864\,a^2\,b^2\,e^{2\,c}\,\text{Cosh}[2\,d\,x]+216\,b^4\,e^{2\,c}\,\text{Cosh}[2\,d\,x]+864\,a^2\,b^2\,e^{6\,c}\,\text{Cosh}[2\,d\,x]+$$
$$216\,b^4\,e^{6\,c}\,\text{Cosh}[2\,d\,x]+1728\,a^2\,b^2\,d\,e^{2\,c}\,x\,\text{Cosh}[2\,d\,x]+432\,b^4\,d\,e^{2\,c}\,x\,\text{Cosh}[2\,d\,x]-$$
$$1728\,a^2\,b^2\,d\,e^{6\,c}\,x\,\text{Cosh}[2\,d\,x]-432\,b^4\,d\,e^{6\,c}\,x\,\text{Cosh}[2\,d\,x]+1728\,a^2\,b^2\,d^2\,e^{2\,c}\,x^2\,\text{Cosh}[2\,d\,x]+$$
$$432\,b^4\,d^2\,e^{2\,c}\,x^2\,\text{Cosh}[2\,d\,x]+1728\,a^2\,b^2\,d^2\,e^{6\,c}\,x^2\,\text{Cosh}[2\,d\,x]+$$
$$432\,b^4\,d^2\,e^{6\,c}\,x^2\,\text{Cosh}[2\,d\,x]+128\,a\,b^3\,e^c\,\text{Cosh}[3\,d\,x]-128\,a\,b^3\,e^{7\,c}\,\text{Cosh}[3\,d\,x]+$$
$$384\,a\,b^3\,d\,e^c\,x\,\text{Cosh}[3\,d\,x]+384\,a\,b^3\,d\,e^{7\,c}\,x\,\text{Cosh}[3\,d\,x]+576\,a\,b^3\,d^2\,e^c\,x^2\,\text{Cosh}[3\,d\,x]-$$
$$576\,a\,b^3\,d^2\,e^{7\,c}\,x^2\,\text{Cosh}[3\,d\,x]+27\,b^4\,\text{Cosh}[4\,d\,x]+27\,b^4\,e^{8\,c}\,\text{Cosh}[4\,d\,x]+$$
$$108\,b^4\,d\,x\,\text{Cosh}[4\,d\,x]-108\,b^4\,d\,e^{8\,c}\,x\,\text{Cosh}[4\,d\,x]+216\,b^4\,d^2\,x^2\,\text{Cosh}[4\,d\,x]+$$
$$216\,b^4\,d^2\,e^{8\,c}\,x^2\,\text{Cosh}[4\,d\,x]+13\,824\,a^4\,d^2\,e^{4\,c}\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]+$$

$$10\,368\,a^2\,b^2\,d^2\,e^{4\,c}\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]+$$

$$864\,b^4\,d^2\,e^{4\,c}\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]+$$

$$13\,824\,a^4\,d^2\,e^{4\,c}\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\Big]+10\,368\,a^2\,b^2\,d^2\,e^{4\,c}\,x^2$$

$$\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+864\,b^4 d^2 e^{4c} x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$1728\left(16a^4+12a^2b^2+b^4\right)d\,e^{4c}\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$

$$1728\left(16a^4+12a^2b^2+b^4\right)d\,e^{4c}\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$27648\,a^4 e^{4c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$20736\,a^2 b^2 e^{4c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$1728\,b^4 e^{4c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$27648\,a^4 e^{4c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$20736\,a^2 b^2 e^{4c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$1728\,b^4 e^{4c}\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-13824\,a^3 b\,e^{3c}\,\text{Sinh}[d\,x]-$$

$$6912\,a\,b^3 e^{3c}\,\text{Sinh}[d\,x]-13824\,a^3 b\,e^{5c}\,\text{Sinh}[d\,x]-6912\,a\,b^3 e^{5c}\,\text{Sinh}[d\,x]-$$
$$13824\,a^3 b\,d\,e^{3c}\,x\,\text{Sinh}[d\,x]-6912\,a\,b^3 d\,e^{3c}\,x\,\text{Sinh}[d\,x]+13824\,a^3 b\,d\,e^{5c}\,x\,\text{Sinh}[d\,x]+$$
$$6912\,a\,b^3 d\,e^{5c}\,x\,\text{Sinh}[d\,x]-6912\,a^3 b\,d^2 e^{3c} x^2\,\text{Sinh}[d\,x]-3456\,a\,b^3 d^2 e^{3c} x^2\,\text{Sinh}[d\,x]-$$
$$6912\,a^3 b\,d^2 e^{5c} x^2\,\text{Sinh}[d\,x]-3456\,a\,b^3 d^2 e^{5c} x^2\,\text{Sinh}[d\,x]-864\,a^2 b^2 e^{2c}\,\text{Sinh}[2\,d\,x]-$$
$$216\,b^4 e^{2c}\,\text{Sinh}[2\,d\,x]+864\,a^2 b^2 e^{6c}\,\text{Sinh}[2\,d\,x]+216\,b^4 e^{6c}\,\text{Sinh}[2\,d\,x]-$$
$$1728\,a^2 b^2 d\,e^{2c}\,x\,\text{Sinh}[2\,d\,x]-432\,b^4 d\,e^{2c}\,x\,\text{Sinh}[2\,d\,x]-1728\,a^2 b^2 d\,e^{6c}\,x\,\text{Sinh}[2\,d\,x]-$$
$$432\,b^4 d\,e^{6c}\,x\,\text{Sinh}[2\,d\,x]-1728\,a^2 b^2 d^2 e^{2c} x^2\,\text{Sinh}[2\,d\,x]-432\,b^4 d^2 e^{2c} x^2\,\text{Sinh}[2\,d\,x]+$$
$$1728\,a^2 b^2 d^2 e^{6c} x^2\,\text{Sinh}[2\,d\,x]+432\,b^4 d^2 e^{6c} x^2\,\text{Sinh}[2\,d\,x]-128\,a\,b^3 e^{c}\,\text{Sinh}[3\,d\,x]-$$
$$128\,a\,b^3 e^{7c}\,\text{Sinh}[3\,d\,x]-384\,a\,b^3 d\,e^{c}\,x\,\text{Sinh}[3\,d\,x]+384\,a\,b^3 d\,e^{7c}\,x\,\text{Sinh}[3\,d\,x]-$$
$$576\,a\,b^3 d^2 e^{c} x^2\,\text{Sinh}[3\,d\,x]-576\,a\,b^3 d^2 e^{7c} x^2\,\text{Sinh}[3\,d\,x]-27\,b^4\,\text{Sinh}[4\,d\,x]+$$
$$27\,b^4 e^{8c}\,\text{Sinh}[4\,d\,x]-108\,b^4 d\,x\,\text{Sinh}[4\,d\,x]-108\,b^4 d\,e^{8c}\,x\,\text{Sinh}[4\,d\,x]-$$
$$\left.216\,b^4 d^2 x^2\,\text{Sinh}[4\,d\,x]+216\,b^4 d^2 e^{8c} x^2\,\text{Sinh}[4\,d\,x]\right)+\frac{1}{16\,b^3\,d}$$

$$e^2\left(b^2\,\text{Cosh}\left[2\left(c+d\,x\right)\right]+\left(4a^2+b^2\right)\text{Log}[a+b\,\text{Sinh}[c+d\,x]]-4\,a\,b\,\text{Sinh}[c+d\,x]\right)+$$

$$\frac{1}{16\,b^3\,d^2}$$

$$e\,f\left(8\,a\,b\,\text{Cosh}[c+d\,x]+2\,b^2 d\,x\,\text{Cosh}\left[2\left(c+d\,x\right)\right]-\right.$$

$$8\,a^2\,c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]-2\,b^2\,c\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]+8\,a^2$$

$$\left(-\frac{1}{8}\left(2\,c+i\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{\left(a+i\,b\right)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)+2\,b^2$$

$$\left(-\frac{1}{8}\left(2\,c+i\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{\left(a+i\,b\right)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\left.\left.\text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right) - 8 a b d x \,\text{Sinh}[c+d x] - b^2 \,\text{Sinh}[2 (c+d x)]\right) +$$

$$\frac{1}{96 b^5 d} e^2 \left(6 b^2 \left(4 a^2+b^2\right) \text{Cosh}[2 (c+d x)] + 3 b^4 \,\text{Cosh}[4 (c+d x)] + 6 \left(16 a^4+12 a^2 b^2+b^4\right) \text{Log}[a+b \,\text{Sinh}[c+d x]] - 48 a b \left(2 a^2+b^2\right) \text{Sinh}[c+d x] - 8 a b^3 \,\text{Sinh}[3 (c+d x)]\right) +$$

$$\frac{1}{576 b^5 d^2} e f \left(576 a b \left(2 a^2+b^2\right) \text{Cosh}[c+d x] + 72 b^2 \left(4 a^2+b^2\right) d x \,\text{Cosh}[2 (c+d x)] + 32 a b^3 \,\text{Cosh}[3 (c+d x)] + 36 b^4 d x \,\text{Cosh}[4 (c+d x)] - 1152 a^4 c \,\text{Log}\left[1+\frac{b \,\text{Sinh}[c+d x]}{a}\right] - 864 a^2 b^2 c \,\text{Log}\left[1+\frac{b \,\text{Sinh}[c+d x]}{a}\right] - 72 b^4 c \,\text{Log}\left[1+\frac{b \,\text{Sinh}[c+d x]}{a}\right] + 1152 a^4 \left(-\frac{1}{8} (2 c+i \pi+2 d x)^2 - 4 \,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \,\text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right] + \frac{1}{2} \left(2 c+i \pi+2 d x+4 i \,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + \frac{1}{2} \left(2 c+i \pi+2 d x-4 i \,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] - \frac{1}{2} i \pi \,\text{Log}[a+b \,\text{Sinh}[c+d x]] + \text{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] + \text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right) + 864 a^2 b^2$$

$$\left(-\frac{1}{8}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{\left(a+\mathrm{i}\,b\right)\,\text{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]+\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]\right)+72\,b^4$$

$$\left(-\frac{1}{8}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{\left(a+\mathrm{i}\,b\right)\,\text{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x+4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+\mathrm{i}\,\pi+2\,d\,x-4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{\mathrm{i}\,a}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,\mathrm{i}\,\pi\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]+\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$

$$\left.\text{PolyLog}\left[2,\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]\right)-576\,a\,b\left(2\,a^2+b^2\right)d\,x\,\text{Sinh}[c+d\,x]-$$

$$\left.36\,b^2\left(4\,a^2+b^2\right)\text{Sinh}[2\,(c+d\,x)]-96\,a\,b^3\,d\,x\,\text{Sinh}[3\,(c+d\,x)]-9\,b^4\,\text{Sinh}[4\,(c+d\,x)]\right)$$

Problem 374: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 499 leaves, 22 steps):

$$\frac{a^2\,f\,x}{4\,b^3\,d}-\frac{3\,f\,x}{32\,b\,d}-\frac{a^2\left(a^2+b^2\right)(e+f\,x)^2}{2\,b^5\,f}+\frac{a^3\,f\,\text{Cosh}[c+d\,x]}{b^4\,d^2}+\frac{2\,a\,f\,\text{Cosh}[c+d\,x]}{3\,b^2\,d^2}+$$

$$\frac{a\,f\,\text{Cosh}[c+d\,x]^3}{9\,b^2\,d^2}+\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]^4}{4\,b\,d}+\frac{a^2\left(a^2+b^2\right)(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d}+$$

$$\frac{a^2\left(a^2+b^2\right)(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d}+\frac{a^2\left(a^2+b^2\right)f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d^2}+$$

$$\frac{a^2\left(a^2+b^2\right)f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d^2}-\frac{a^3\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{b^4\,d}-$$

$$\frac{2\,a\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{3\,b^2\,d}-\frac{a^2\,f\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{4\,b^3\,d^2}-\frac{3\,f\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{32\,b\,d^2}-$$

$$\frac{a\,(e+f\,x)\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]}{3\,b^2\,d}-\frac{f\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{16\,b\,d^2}+\frac{a^2\,(e+f\,x)\,\text{Sinh}[c+d\,x]^2}{2\,b^3\,d}$$

Result (type 4, 1457 leaves):

$$\frac{1}{1152\,b^5\,d^2}\left(-576\,a^4\,c^2\,f-576\,a^2\,b^2\,c^2\,f-576\,i\,a^4\,c\,f\,\pi-576\,i\,a^2\,b^2\,c\,f\,\pi+144\,a^4\,f\,\pi^2+144\,a^2\,b^2\,f\,\pi^2-\right.$$

$$1152\,a^4\,c\,d\,f\,x-1152\,a^2\,b^2\,c\,d\,f\,x-576\,i\,a^4\,d\,f\,\pi\,x-576\,i\,a^2\,b^2\,d\,f\,\pi\,x-576\,a^4\,d^2\,f\,x^2-$$

$$576\,a^2\,b^2\,d^2\,f\,x^2-4608\,a^4\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{a^2+b^2}}\right]-$$

$$4608\, a^2 b^2 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+$$

$$1152\, a^3 b f \text{Cosh}[c+d x]+864\, a b^3 f \text{Cosh}[c+d x]+288\, a^2 b^2 d e \text{Cosh}[2(c+d x)]+$$
$$144\, b^4 d e \text{Cosh}[2(c+d x)]+288\, a^2 b^2 d f x \text{Cosh}[2(c+d x)]+144\, b^4 d f x \text{Cosh}[2(c+d x)]+$$
$$32\, a b^3 f \text{Cosh}[3(c+d x)]+36\, b^4 d e \text{Cosh}[4(c+d x)]+36\, b^4 d f x \text{Cosh}[4(c+d x)]+$$

$$1152\, a^4 c f \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+1152\, a^2 b^2 c f \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$576\, i a^4 f \pi \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+576\, i a^2 b^2 f \pi \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$1152\, a^4 d f x \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+1152\, a^2 b^2 d f x \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$2304\, i a^4 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$2304\, i a^2 b^2 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$1152\, a^4 c f \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+1152\, a^2 b^2 c f \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$576\, i a^4 f \pi \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+576\, i a^2 b^2 f \pi \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$1152\, a^4 d f x \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+1152\, a^2 b^2 d f x \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$2304\, i a^4 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$2304\, i a^2 b^2 f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$1152\, a^4 d e \text{Log}[a+b \text{Sinh}[c+d x]]+1152\, a^2 b^2 d e \text{Log}[a+b \text{Sinh}[c+d x]]-$$
$$576\, i a^4 f \pi \text{Log}[a+b \text{Sinh}[c+d x]]-576\, i a^2 b^2 f \pi \text{Log}[a+b \text{Sinh}[c+d x]]-$$
$$1152\, a^4 c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]-1152\, a^2 b^2 c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]+$$

$$1152\, a^2 \left(a^2+b^2\right) f \text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$1152\, a^2\, (a^2+b^2)\, f\, \text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] - 1152\, a^3\, b\, d\, e\, \text{Sinh}[c+d x] -$$
$$864\, a\, b^3\, d\, e\, \text{Sinh}[c+d x] - 1152\, a^3\, b\, d\, f\, x\, \text{Sinh}[c+d x] - 864\, a\, b^3\, d\, f\, x\, \text{Sinh}[c+d x] -$$
$$144\, a^2\, b^2\, f\, \text{Sinh}[2\, (c+d x)] - 72\, b^4\, f\, \text{Sinh}[2\, (c+d x)] -$$
$$\left.96\, a\, b^3\, d\, e\, \text{Sinh}[3\, (c+d x)] - 96\, a\, b^3\, d\, f\, x\, \text{Sinh}[3\, (c+d x)] - 9\, b^4\, f\, \text{Sinh}[4\, (c+d x)]\right)$$

Problem 376: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d x]^3\, \text{Sinh}[c+d x]^2}{(e+f x)\, (a+b\, \text{Sinh}[c+d x])}\, dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d x]^3\, \text{Sinh}[c+d x]^2}{(e+f x)\, (a+b\, \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 381: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sinh}[c+d x]\, \text{Tanh}[c+d x]}{(e+f x)\, (a+b\, \text{Sinh}[c+d x])}\, dx$$

Optimal (type 8, 35 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c+d x]\, \text{Tanh}[c+d x]}{(e+f x)\, (a+b\, \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 384: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(e+f x)\, \text{Tanh}[c+d x]^2}{a+b\, \text{Sinh}[c+d x]}\, dx$$

Optimal (type 4, 385 leaves, 21 steps):

$$\frac{f\,\text{ArcTan}[\text{Sinh}[c+d\,x]]}{b\,d^2}-\frac{a^2\,f\,\text{ArcTan}[\text{Sinh}[c+d\,x]]}{b\,(a^2+b^2)\,d^2}+\frac{a^2\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d}-\frac{a^2\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d}+\frac{a\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{b^2\,d^2}-\frac{a^3\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{b^2\,(a^2+b^2)\,d^2}+\frac{a^2\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^2}-\frac{a^2\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{(a^2+b^2)^{3/2}\,d^2}-\frac{(e+f\,x)\,\text{Sech}[c+d\,x]}{b\,d}+\frac{a^2\,(e+f\,x)\,\text{Sech}[c+d\,x]}{b\,(a^2+b^2)\,d}-\frac{a\,(e+f\,x)\,\text{Tanh}[c+d\,x]}{b^2\,d}+\frac{a^3\,(e+f\,x)\,\text{Tanh}[c+d\,x]}{b^2\,(a^2+b^2)\,d}$$

Result (type 4, 432 leaves):

$$\frac{1}{2\,d^2}\left(-\frac{2\,i\,f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a-i\,b}+\frac{2\,i\,f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a+i\,b}+\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{a-i\,b}+\frac{f\,\text{Log}[\text{Cosh}[c+d\,x]]}{a+i\,b}-\frac{1}{\left(-(a^2+b^2)^2\right)^{3/2}}2\,a^2\,(a^2+b^2)\left(2\sqrt{a^2+b^2}\,d\,e\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]-2\sqrt{a^2+b^2}\,c\,f\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]+\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]+\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)-\frac{2\,d\,(e+f\,x)\,\text{Sech}[c+d\,x]\,(b+a\,\text{Sinh}[c+d\,x])}{a^2+b^2}\right)$$

Problem 386: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Tanh}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Tanh}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 387: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Sech}[c+d x] \operatorname{Tanh}[c+d x]^2}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 1256 leaves, 53 steps):

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

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

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

$$\frac{f^2\,\text{Log}[\text{Cosh}[c+d x]]}{b\,d^3}+\frac{a^2 f^2\,\text{Log}[\text{Cosh}[c+d x]]}{b\left(a^2+b^2\right) d^3}+\frac{i\,a f\,(e+f x)\,\text{PolyLog}\left[2,-i\,e^{c+d x}\right]}{b^2 d^2}-$$

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

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

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

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

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

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

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

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

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

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

Result (type 4, 3124 leaves):

$$-\frac{1}{6\left(a^2+b^2\right)^2 d^3\left(1+e^{2 c}\right)}$$

$$\left(-12 a^2 b\,d^3 e^2 e^{2 c} x-12 a^2 b\,d\,e^{2 c} f^2 x-12 b^3 d\,e^{2 c} f^2 x-12 a^2 b\,d^3 e\,e^{2 c} f x^2-4 a^2 b\,d^3 e^{2 c} f^2 x^3-\right.$$

$$
\begin{aligned}
&6 a^3 d^2 e^2 \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]+6 a b^2 d^2 e^2 \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]-6 a^3 d^2 e^2 \mathrm{e}^{2 c} \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]+\\
&6 a b^2 d^2 e^2 \mathrm{e}^{2 c} \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]-12 a^3 f^2 \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]-12 a b^2 f^2 \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]-\\
&12 a^3 \mathrm{e}^{2 c} f^2 \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]-12 a b^2 \mathrm{e}^{2 c} f^2 \,\text{ArcTan}\left[\mathrm{e}^{c+d x}\right]-6 \mathrm{i} a^3 d^2 e f x \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&6 \mathrm{i} a b^2 d^2 e f x \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]-6 \mathrm{i} a^3 d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&6 \mathrm{i} a b^2 d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]-3 \mathrm{i} a^3 d^2 f^2 x^2 \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&3 \mathrm{i} a b^2 d^2 f^2 x^2 \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]-3 \mathrm{i} a^3 d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&3 \mathrm{i} a b^2 d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1-\mathrm{i} \mathrm{e}^{c+d x}\right]+6 \mathrm{i} a^3 d^2 e f x \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&6 \mathrm{i} a b^2 d^2 e f x \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]+6 \mathrm{i} a^3 d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&6 \mathrm{i} a b^2 d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]+3 \mathrm{i} a^3 d^2 f^2 x^2 \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&3 \mathrm{i} a b^2 d^2 f^2 x^2 \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]+3 \mathrm{i} a^3 d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&3 \mathrm{i} a b^2 d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1+\mathrm{i} \mathrm{e}^{c+d x}\right]+6 a^2 b d^2 e^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+\\
&6 a^2 b d^2 e^2 \mathrm{e}^{2 c} \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+6 a^2 b f^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+6 b^3 f^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+\\
&6 a^2 b \mathrm{e}^{2 c} f^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+6 b^3 \mathrm{e}^{2 c} f^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+12 a^2 b d^2 e f x \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+\\
&12 a^2 b d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+6 a^2 b d^2 f^2 x^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+\\
&6 a^2 b d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1+\mathrm{e}^{2 (c+d x)}\right]+6 \mathrm{i} a \left(a^2-b^2\right) d \left(1+\mathrm{e}^{2 c}\right) f (e+f x) \,\text{PolyLog}\left[2,-\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&6 \mathrm{i} a \left(a^2-b^2\right) d \left(1+\mathrm{e}^{2 c}\right) f (e+f x) \,\text{PolyLog}\left[2,\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&6 a^2 b d e f \,\text{PolyLog}\left[2,-\mathrm{e}^{2 (c+d x)}\right]+6 a^2 b d e \mathrm{e}^{2 c} f \,\text{PolyLog}\left[2,-\mathrm{e}^{2 (c+d x)}\right]+\\
&6 a^2 b d f^2 x \,\text{PolyLog}\left[2,-\mathrm{e}^{2 (c+d x)}\right]+6 a^2 b d \mathrm{e}^{2 c} f^2 x \,\text{PolyLog}\left[2,-\mathrm{e}^{2 (c+d x)}\right]-\\
&6 \mathrm{i} a^3 f^2 \,\text{PolyLog}\left[3,-\mathrm{i} \mathrm{e}^{c+d x}\right]+6 \mathrm{i} a b^2 f^2 \,\text{PolyLog}\left[3,-\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&6 \mathrm{i} a^3 \mathrm{e}^{2 c} f^2 \,\text{PolyLog}\left[3,-\mathrm{i} \mathrm{e}^{c+d x}\right]+6 \mathrm{i} a b^2 \mathrm{e}^{2 c} f^2 \,\text{PolyLog}\left[3,-\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&6 \mathrm{i} a^3 f^2 \,\text{PolyLog}\left[3,\mathrm{i} \mathrm{e}^{c+d x}\right]-6 \mathrm{i} a b^2 f^2 \,\text{PolyLog}\left[3,\mathrm{i} \mathrm{e}^{c+d x}\right]+\\
&6 \mathrm{i} a^3 \mathrm{e}^{2 c} f^2 \,\text{PolyLog}\left[3,\mathrm{i} \mathrm{e}^{c+d x}\right]-6 \mathrm{i} a b^2 \mathrm{e}^{2 c} f^2 \,\text{PolyLog}\left[3,\mathrm{i} \mathrm{e}^{c+d x}\right]-\\
&3 a^2 b f^2 \,\text{PolyLog}\left[3,-\mathrm{e}^{2 (c+d x)}\right]-3 a^2 b \mathrm{e}^{2 c} f^2 \,\text{PolyLog}\left[3,-\mathrm{e}^{2 (c+d x)}\right]\Big)-
\end{aligned}
$$

$$
\begin{aligned}
&\frac{1}{3 \left(a^2+b^2\right)^2 d^3 \left(-1+\mathrm{e}^{2 c}\right)} a^2 b \Bigg(6 d^3 e^2 \mathrm{e}^{2 c} x+6 d^3 e \mathrm{e}^{2 c} f x^2+2 d^3 \mathrm{e}^{2 c} f^2 x^3+\\
&3 d^2 e^2 \,\text{Log}\left[2 a \mathrm{e}^{c+d x}+b \left(-1+\mathrm{e}^{2 (c+d x)}\right)\right]-3 d^2 e^2 \mathrm{e}^{2 c} \,\text{Log}\left[2 a \mathrm{e}^{c+d x}+b \left(-1+\mathrm{e}^{2 (c+d x)}\right)\right]+\\
&6 d^2 e f x \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-6 d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]+\\
&3 d^2 f^2 x^2 \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-3 d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]+\\
&6 d^2 e f x \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c+\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-6 d^2 e \mathrm{e}^{2 c} f x \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c+\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]+\\
&3 d^2 f^2 x^2 \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c+\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-3 d^2 \mathrm{e}^{2 c} f^2 x^2 \,\text{Log}\left[1+\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c+\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-\\
&6 d \left(-1+\mathrm{e}^{2 c}\right) f (e+f x) \,\text{PolyLog}\left[2,-\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-\\
&6 d \left(-1+\mathrm{e}^{2 c}\right) f (e+f x) \,\text{PolyLog}\left[2,-\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c+\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-\\
&6 f^2 \,\text{PolyLog}\left[3,-\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]+6 \mathrm{e}^{2 c} f^2 \,\text{PolyLog}\left[3,-\frac{b \mathrm{e}^{2 c+d x}}{a \mathrm{e}^c-\sqrt{\left(a^2+b^2\right) \mathrm{e}^{2 c}}}\right]-
\end{aligned}
$$

$$6\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)+$$

$$\frac{1}{24\,\left(a^2+b^2\right)^2\,d^2}\,\text{Csch}[c]\,\text{Sech}[c]\,\text{Sech}[c+d\,x]^2\,\Big(6\,a^2\,b\,e\,f+6\,b^3\,e\,f+12\,a^2\,b\,d^2\,e^2\,x+$$
$$6\,a^2\,b\,f^2\,x+6\,b^3\,f^2\,x+12\,a^2\,b\,d^2\,e\,f\,x^2+4\,a^2\,b\,d^2\,f^2\,x^3-6\,a^2\,b\,e\,f\,\text{Cosh}[2\,c]-$$
$$6\,b^3\,e\,f\,\text{Cosh}[2\,c]-6\,a^2\,b\,f^2\,x\,\text{Cosh}[2\,c]-6\,b^3\,f^2\,x\,\text{Cosh}[2\,c]-6\,a^2\,b\,e\,f\,\text{Cosh}[2\,d\,x]-$$
$$6\,b^3\,e\,f\,\text{Cosh}[2\,d\,x]-6\,a^2\,b\,f^2\,x\,\text{Cosh}[2\,d\,x]-6\,b^3\,f^2\,x\,\text{Cosh}[2\,d\,x]+3\,a^3\,d\,e^2\,\text{Cosh}[c-d\,x]+$$
$$3\,a\,b^2\,d\,e^2\,\text{Cosh}[c-d\,x]+6\,a^3\,d\,e\,f\,x\,\text{Cosh}[c-d\,x]+6\,a\,b^2\,d\,e\,f\,x\,\text{Cosh}[c-d\,x]+$$
$$3\,a^3\,d\,f^2\,x^2\,\text{Cosh}[c-d\,x]+3\,a\,b^2\,d\,f^2\,x^2\,\text{Cosh}[c-d\,x]-3\,a^3\,d\,e^2\,\text{Cosh}[3\,c+d\,x]-$$
$$3\,a\,b^2\,d\,e^2\,\text{Cosh}[3\,c+d\,x]-6\,a^3\,d\,e\,f\,x\,\text{Cosh}[3\,c+d\,x]-6\,a\,b^2\,d\,e\,f\,x\,\text{Cosh}[3\,c+d\,x]-$$
$$3\,a^3\,d\,f^2\,x^2\,\text{Cosh}[3\,c+d\,x]-3\,a\,b^2\,d\,f^2\,x^2\,\text{Cosh}[3\,c+d\,x]+6\,a^2\,b\,e\,f\,\text{Cosh}[2\,c+2\,d\,x]+$$
$$6\,b^3\,e\,f\,\text{Cosh}[2\,c+2\,d\,x]+12\,a^2\,b\,d^2\,e^2\,x\,\text{Cosh}[2\,c+2\,d\,x]+6\,a^2\,b\,f^2\,x\,\text{Cosh}[2\,c+2\,d\,x]+$$
$$6\,b^3\,f^2\,x\,\text{Cosh}[2\,c+2\,d\,x]+12\,a^2\,b\,d^2\,e\,f\,x^2\,\text{Cosh}[2\,c+2\,d\,x]+4\,a^2\,b\,d^2\,f^2\,x^3\,\text{Cosh}[2\,c+2\,d\,x]-$$
$$6\,a^2\,b\,d\,e^2\,\text{Sinh}[2\,c]-6\,b^3\,d\,e^2\,\text{Sinh}[2\,c]-12\,a^2\,b\,d\,e\,f\,x\,\text{Sinh}[2\,c]-12\,b^3\,d\,e\,f\,x\,\text{Sinh}[2\,c]-$$
$$6\,a^2\,b\,d\,f^2\,x^2\,\text{Sinh}[2\,c]-6\,b^3\,d\,f^2\,x^2\,\text{Sinh}[2\,c]-6\,a^3\,e\,f\,\text{Sinh}[c-d\,x]-6\,a\,b^2\,e\,f\,\text{Sinh}[c-d\,x]-$$
$$6\,a^3\,f^2\,x\,\text{Sinh}[c-d\,x]-6\,a\,b^2\,f^2\,x\,\text{Sinh}[c-d\,x]-6\,a^3\,e\,f\,\text{Sinh}[3\,c+d\,x]-$$
$$6\,a\,b^2\,e\,f\,\text{Sinh}[3\,c+d\,x]-6\,a^3\,f^2\,x\,\text{Sinh}[3\,c+d\,x]-6\,a\,b^2\,f^2\,x\,\text{Sinh}[3\,c+d\,x]\Big)$$

Problem 390: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Sech}[c+d\,x]\,\text{Tanh}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sech}[c+d\,x]\,\text{Tanh}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 391: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 792 leaves, 30 steps):

$$-\frac{3 a f^3 x}{8 b^2 d^3}-\frac{a (e+f x)^3}{4 b^2 d}+\frac{a^3 (e+f x)^4}{4 b^4 f}-\frac{6 a^2 f^3 \text{Cosh}[c+d x]}{b^3 d^4}+\frac{14 f^3 \text{Cosh}[c+d x]}{9 b d^4}-\frac{3 a^2 f (e+f x)^2 \text{Cosh}[c+d x]}{b^3 d^2}+\frac{2 f (e+f x)^2 \text{Cosh}[c+d x]}{3 b d^2}-\frac{2 f^3 \text{Cosh}[c+d x]^3}{27 b d^4}-\frac{a^3 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{a^3 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d}-\frac{3 a^3 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^2}-\frac{3 a^3 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^2}+\frac{6 a^3 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^3}+\frac{6 a^3 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^3}-\frac{6 a^3 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^4 d^4}-\frac{6 a^3 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^4 d^4}+\frac{6 a^2 f^2 (e+f x) \text{Sinh}[c+d x]}{b^3 d^3}-\frac{4 f^2 (e+f x) \text{Sinh}[c+d x]}{3 b d^3}+\frac{a^2 (e+f x)^3 \text{Sinh}[c+d x]}{b^3 d}+\frac{3 a f^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{8 b^2 d^4}+\frac{3 a f (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b^2 d^2}-\frac{3 a f^2 (e+f x) \text{Sinh}[c+d x]^2}{4 b^2 d^3}-\frac{a (e+f x)^3 \text{Sinh}[c+d x]^2}{2 b^2 d}-\frac{f (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]^2}{3 b d^2}+\frac{2 f^2 (e+f x) \text{Sinh}[c+d x]^3}{9 b d^3}+\frac{(e+f x)^3 \text{Sinh}[c+d x]^3}{3 b d}$$

Result (type 4, 4308 leaves) :

$$\frac{1}{864 b^4 d^4} e^{-3 c} \Bigg(1296 a^3 c^2 d^2 e^2 e^{3 c} f+1296 i a^3 c d^2 e^2 e^{3 c} f \pi-324 a^3 d^2 e^2 e^{3 c} f \pi^2+2592 a^3 c d^3 e^2 e^{3 c} f x+$$
$$1296 i a^3 d^3 e^2 e^{3 c} f \pi x+1296 a^3 d^4 e^2 e^{3 c} f x^2+864 a^3 d^4 e e^{3 c} f^2 x^3+216 a^3 d^4 e^{3 c} f^3 x^4+$$
$$10368 a^3 d^2 e^2 e^{3 c} f \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]-$$
$$2592 a^2 b d e e^{2 c} f^2 \text{Cosh}[d x]+648 b^3 d e e^{2 c} f^2 \text{Cosh}[d x]+2592 a^2 b d e e^{4 c} f^2 \text{Cosh}[d x]-$$
$$648 b^3 d e e^{4 c} f^2 \text{Cosh}[d x]-2592 a^2 b e^{2 c} f^3 \text{Cosh}[d x]+648 b^3 e^{2 c} f^3 \text{Cosh}[d x]-$$
$$2592 a^2 b e^{4 c} f^3 \text{Cosh}[d x]+648 b^3 e^{4 c} f^3 \text{Cosh}[d x]-2592 a^2 b d^2 e e^{2 c} f^2 x \text{Cosh}[d x]+$$
$$648 b^3 d^2 e e^{2 c} f^2 x \text{Cosh}[d x]-2592 a^2 b d^2 e e^{4 c} f^2 x \text{Cosh}[d x]+648 b^3 d^2 e e^{4 c} f^2 x \text{Cosh}[d x]-$$
$$2592 a^2 b d e^{2 c} f^3 x \text{Cosh}[d x]+648 b^3 d e^{2 c} f^3 x \text{Cosh}[d x]+2592 a^2 b d e^{4 c} f^3 x \text{Cosh}[d x]-$$
$$648 b^3 d e^{4 c} f^3 x \text{Cosh}[d x]-1296 a^2 b d^3 e e^{2 c} f^2 x^2 \text{Cosh}[d x]+324 b^3 d^3 e e^{2 c} f^2 x^2 \text{Cosh}[d x]+$$
$$1296 a^2 b d^3 e e^{4 c} f^2 x^2 \text{Cosh}[d x]-324 b^3 d^3 e e^{4 c} f^2 x^2 \text{Cosh}[d x]-$$

$1296\,a^2\,b\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{Cosh}[d\,x]+324\,b^3\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{Cosh}[d\,x]-1296\,a^2\,b\,d^2\,e^{4\,c}\,f^3\,x^2\,\text{Cosh}[d\,x]+$
$324\,b^3\,d^2\,e^{4\,c}\,f^3\,x^2\,\text{Cosh}[d\,x]-432\,a^2\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Cosh}[d\,x]+108\,b^3\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Cosh}[d\,x]+$
$432\,a^2\,b\,d^3\,e^{4\,c}\,f^3\,x^3\,\text{Cosh}[d\,x]-108\,b^3\,d^3\,e^{4\,c}\,f^3\,x^3\,\text{Cosh}[d\,x]-162\,a\,b^2\,d\,e\,e^{c}\,f^2\,\text{Cosh}[2\,d\,x]-$
$162\,a\,b^2\,d\,e\,e^{5\,c}\,f^2\,\text{Cosh}[2\,d\,x]-81\,a\,b^2\,e^{c}\,f^3\,\text{Cosh}[2\,d\,x]+81\,a\,b^2\,e^{5\,c}\,f^3\,\text{Cosh}[2\,d\,x]-$
$324\,a\,b^2\,d^2\,e\,e^{c}\,f^2\,x\,\text{Cosh}[2\,d\,x]+324\,a\,b^2\,d^2\,e\,e^{5\,c}\,f^2\,x\,\text{Cosh}[2\,d\,x]-$
$162\,a\,b^2\,d\,e^{c}\,f^3\,x\,\text{Cosh}[2\,d\,x]-162\,a\,b^2\,d\,e^{5\,c}\,f^3\,x\,\text{Cosh}[2\,d\,x]-324\,a\,b^2\,d^3\,e\,e^{c}\,f^2\,x^2\,\text{Cosh}[2\,d\,x]-$
$324\,a\,b^2\,d^3\,e\,e^{5\,c}\,f^2\,x^2\,\text{Cosh}[2\,d\,x]-162\,a\,b^2\,d^2\,e^{c}\,f^3\,x^2\,\text{Cosh}[2\,d\,x]+$
$162\,a\,b^2\,d^2\,e^{5\,c}\,f^3\,x^2\,\text{Cosh}[2\,d\,x]-108\,a\,b^2\,d^3\,e^{c}\,f^3\,x^3\,\text{Cosh}[2\,d\,x]-$
$108\,a\,b^2\,d^3\,e^{5\,c}\,f^3\,x^3\,\text{Cosh}[2\,d\,x]-24\,b^3\,d\,e\,f^2\,\text{Cosh}[3\,d\,x]+24\,b^3\,d\,e\,e^{6\,c}\,f^2\,\text{Cosh}[3\,d\,x]-$
$8\,b^3\,f^3\,\text{Cosh}[3\,d\,x]-8\,b^3\,e^{6\,c}\,f^3\,\text{Cosh}[3\,d\,x]-72\,b^3\,d^2\,e\,f^2\,x\,\text{Cosh}[3\,d\,x]-$
$72\,b^3\,d^2\,e\,e^{6\,c}\,f^2\,x\,\text{Cosh}[3\,d\,x]-24\,b^3\,d\,f^3\,x\,\text{Cosh}[3\,d\,x]+24\,b^3\,d\,e^{6\,c}\,f^3\,x\,\text{Cosh}[3\,d\,x]-$
$108\,b^3\,d^3\,e\,f^2\,x^2\,\text{Cosh}[3\,d\,x]+108\,b^3\,d^3\,e\,e^{6\,c}\,f^2\,x^2\,\text{Cosh}[3\,d\,x]-36\,b^3\,d^2\,f^3\,x^2\,\text{Cosh}[3\,d\,x]-$
$36\,b^3\,d^2\,e^{6\,c}\,f^3\,x^2\,\text{Cosh}[3\,d\,x]-36\,b^3\,d^3\,f^3\,x^3\,\text{Cosh}[3\,d\,x]+36\,b^3\,d^3\,e^{6\,c}\,f^3\,x^3\,\text{Cosh}[3\,d\,x]-$
$2592\,a^2\,b\,d^2\,e^2\,e^{3\,c}\,f\,\text{Cosh}[c+d\,x]+648\,b^3\,d^2\,e^2\,e^{3\,c}\,f\,\text{Cosh}[c+d\,x]-$
$216\,a\,b^2\,d^3\,e^3\,e^{3\,c}\,\text{Cosh}\left[2\,(c+d\,x)\right]-648\,a\,b^2\,d^3\,e^2\,e^{3\,c}\,f\,x\,\text{Cosh}\left[2\,(c+d\,x)\right]-$
$72\,b^3\,d^2\,e^2\,e^{3\,c}\,f\,\text{Cosh}\left[3\,(c+d\,x)\right]-2592\,a^3\,c\,d^2\,e^2\,e^{3\,c}\,f\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$
$1296\,i\,a^3\,d^2\,e^2\,e^{3\,c}\,f\,\pi\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$
$2592\,a^3\,d^3\,e^2\,e^{3\,c}\,f\,x\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$
$5184\,i\,a^3\,d^2\,e^2\,e^{3\,c}\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$
$2592\,a^3\,c\,d^2\,e^2\,e^{3\,c}\,f\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-1296\,i\,a^3\,d^2\,e^2\,e^{3\,c}\,f\,\pi$
$\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-2592\,a^3\,d^3\,e^2\,e^{3\,c}\,f\,x\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$
$5184\,i\,a^3\,d^2\,e^2\,e^{3\,c}\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$
$2592\,a^3\,d^3\,e\,e^{3\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-864\,a^3\,d^3\,e^{3\,c}\,f^3\,x^3$
$\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2592\,a^3\,d^3\,e\,e^{3\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$
$864\,a^3\,d^3\,e^{3\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-864\,a^3\,d^3\,e^3\,e^{3\,c}\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+$
$1296\,i\,a^3\,d^2\,e^2\,e^{3\,c}\,f\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+2592\,a^3\,c\,d^2\,e^2\,e^{3\,c}\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]-$

$$2592\, a^3\, d^2\, e^2\, e^{3\,c}\, f\, \text{PolyLog}\left[2,\, \frac{\left(a-\sqrt{a^2+b^2}\right)\, e^{c+d\,x}}{b}\right] -$$

$$2592\, a^3\, d^2\, e^2\, e^{3\,c}\, f\, \text{PolyLog}\left[2,\, \frac{\left(a+\sqrt{a^2+b^2}\right)\, e^{c+d\,x}}{b}\right] -$$

$$5184\, a^3\, d^2\, e\, e^{3\,c}\, f^2\, x\, \text{PolyLog}\left[2,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] -$$

$$2592\, a^3\, d^2\, e^{3\,c}\, f^3\, x^2\, \text{PolyLog}\left[2,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] -$$

$$5184\, a^3\, d^2\, e\, e^{3\,c}\, f^2\, x\, \text{PolyLog}\left[2,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] -$$

$$2592\, a^3\, d^2\, e^{3\,c}\, f^3\, x^2\, \text{PolyLog}\left[2,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] +$$

$$5184\, a^3\, d\, e\, e^{3\,c}\, f^2\, \text{PolyLog}\left[3,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] +$$

$$5184\, a^3\, d\, e^{3\,c}\, f^3\, x\, \text{PolyLog}\left[3,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] +$$

$$5184\, a^3\, d\, e\, e^{3\,c}\, f^2\, \text{PolyLog}\left[3,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] +$$

$$5184\, a^3\, d\, e^{3\,c}\, f^3\, x\, \text{PolyLog}\left[3,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] -$$

$$5184\, a^3\, e^{3\,c}\, f^3\, \text{PolyLog}\left[4,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] -$$

$$5184\, a^3\, e^{3\,c}\, f^3\, \text{PolyLog}\left[4,\, -\frac{b\, e^{2\,c+d\,x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\,c}}}\right] + 2592\, a^2\, b\, d\, e\, e^{2\,c}\, f^2\, \text{Sinh}[d\,x] -$$

$$648\, b^3\, d\, e\, e^{2\,c}\, f^2\, \text{Sinh}[d\,x] + 2592\, a^2\, b\, d\, e\, e^{4\,c}\, f^2\, \text{Sinh}[d\,x] - 648\, b^3\, d\, e\, e^{4\,c}\, f^2\, \text{Sinh}[d\,x] +$$
$$2592\, a^2\, b\, e^{2\,c}\, f^3\, \text{Sinh}[d\,x] - 648\, b^3\, e^{2\,c}\, f^3\, \text{Sinh}[d\,x] - 2592\, a^2\, b\, e^{4\,c}\, f^3\, \text{Sinh}[d\,x] +$$
$$648\, b^3\, e^{4\,c}\, f^3\, \text{Sinh}[d\,x] + 2592\, a^2\, b\, d^2\, e\, e^{2\,c}\, f^2\, x\, \text{Sinh}[d\,x] - 648\, b^3\, d^2\, e\, e^{2\,c}\, f^2\, x\, \text{Sinh}[d\,x] -$$
$$2592\, a^2\, b\, d^2\, e\, e^{4\,c}\, f^2\, x\, \text{Sinh}[d\,x] + 648\, b^3\, d^2\, e\, e^{4\,c}\, f^2\, x\, \text{Sinh}[d\,x] + 2592\, a^2\, b\, d\, e^{2\,c}\, f^3\, x\, \text{Sinh}[d\,x] -$$
$$648\, b^3\, d\, e^{2\,c}\, f^3\, x\, \text{Sinh}[d\,x] + 2592\, a^2\, b\, d\, e^{4\,c}\, f^3\, x\, \text{Sinh}[d\,x] - 648\, b^3\, d\, e^{4\,c}\, f^3\, x\, \text{Sinh}[d\,x] +$$
$$1296\, a^2\, b\, d^3\, e\, e^{2\,c}\, f^2\, x^2\, \text{Sinh}[d\,x] - 324\, b^3\, d^3\, e\, e^{2\,c}\, f^2\, x^2\, \text{Sinh}[d\,x] +$$
$$1296\, a^2\, b\, d^3\, e\, e^{4\,c}\, f^2\, x^2\, \text{Sinh}[d\,x] - 324\, b^3\, d^3\, e\, e^{4\,c}\, f^2\, x^2\, \text{Sinh}[d\,x] +$$
$$1296\, a^2\, b\, d^2\, e^{2\,c}\, f^3\, x^2\, \text{Sinh}[d\,x] - 324\, b^3\, d^2\, e^{2\,c}\, f^3\, x^2\, \text{Sinh}[d\,x] - 1296\, a^2\, b\, d^2\, e^{4\,c}\, f^3\, x^2\, \text{Sinh}[d\,x] +$$
$$324\, b^3\, d^2\, e^{4\,c}\, f^3\, x^2\, \text{Sinh}[d\,x] + 432\, a^2\, b\, d^3\, e^{2\,c}\, f^3\, x^3\, \text{Sinh}[d\,x] - 108\, b^3\, d^3\, e^{2\,c}\, f^3\, x^3\, \text{Sinh}[d\,x] +$$
$$432\, a^2\, b\, d^3\, e^{4\,c}\, f^3\, x^3\, \text{Sinh}[d\,x] - 108\, b^3\, d^3\, e^{4\,c}\, f^3\, x^3\, \text{Sinh}[d\,x] + 162\, a\, b^2\, d\, e\, e^c\, f^2\, \text{Sinh}[2\,d\,x] -$$
$$162\, a\, b^2\, d\, e\, e^{5\,c}\, f^2\, \text{Sinh}[2\,d\,x] + 81\, a\, b^2\, e^c\, f^3\, \text{Sinh}[2\,d\,x] + 81\, a\, b^2\, e^{5\,c}\, f^3\, \text{Sinh}[2\,d\,x] +$$
$$324\, a\, b^2\, d^2\, e\, e^c\, f^2\, x\, \text{Sinh}[2\,d\,x] + 324\, a\, b^2\, d^2\, e\, e^{5\,c}\, f^2\, x\, \text{Sinh}[2\,d\,x] +$$
$$162\, a\, b^2\, d\, e^c\, f^3\, x\, \text{Sinh}[2\,d\,x] - 162\, a\, b^2\, d\, e^{5\,c}\, f^3\, x\, \text{Sinh}[2\,d\,x] +$$
$$324\, a\, b^2\, d^3\, e\, e^c\, f^2\, x^2\, \text{Sinh}[2\,d\,x] - 324\, a\, b^2\, d^3\, e\, e^{5\,c}\, f^2\, x^2\, \text{Sinh}[2\,d\,x] +$$
$$162\, a\, b^2\, d^2\, e^c\, f^3\, x^2\, \text{Sinh}[2\,d\,x] + 162\, a\, b^2\, d^2\, e^{5\,c}\, f^3\, x^2\, \text{Sinh}[2\,d\,x] +$$

$108\, a\, b^2\, d^3\, e^c\, f^3\, x^3\, \text{Sinh}[2\, d\, x] - 108\, a\, b^2\, d^3\, e^{5c}\, f^3\, x^3\, \text{Sinh}[2\, d\, x] +$
$24\, b^3\, d\, e\, f^2\, \text{Sinh}[3\, d\, x] + 24\, b^3\, d\, e\, e^{6c}\, f^2\, \text{Sinh}[3\, d\, x] + 8\, b^3\, f^3\, \text{Sinh}[3\, d\, x] -$
$8\, b^3\, e^{6c}\, f^3\, \text{Sinh}[3\, d\, x] + 72\, b^3\, d^2\, e\, f^2\, x\, \text{Sinh}[3\, d\, x] - 72\, b^3\, d^2\, e\, e^{6c}\, f^2\, x\, \text{Sinh}[3\, d\, x] +$
$24\, b^3\, d\, f^3\, x\, \text{Sinh}[3\, d\, x] + 24\, b^3\, d\, e^{6c}\, f^3\, x\, \text{Sinh}[3\, d\, x] + 108\, b^3\, d^3\, e\, f^2\, x^2\, \text{Sinh}[3\, d\, x] +$
$108\, b^3\, d^3\, e\, e^{6c}\, f^2\, x^2\, \text{Sinh}[3\, d\, x] + 36\, b^3\, d^2\, f^3\, x^2\, \text{Sinh}[3\, d\, x] - 36\, b^3\, d^2\, e^{6c}\, f^3\, x^2\, \text{Sinh}[3\, d\, x] +$
$36\, b^3\, d^3\, f^3\, x^3\, \text{Sinh}[3\, d\, x] + 36\, b^3\, d^3\, e^{6c}\, f^3\, x^3\, \text{Sinh}[3\, d\, x] + 864\, a^2\, b\, d^3\, e^3\, e^{3c}\, \text{Sinh}[c + d\, x] -$
$216\, b^3\, d^3\, e^3\, e^{3c}\, \text{Sinh}[c + d\, x] + 2592\, a^2\, b\, d^3\, e^2\, e^{3c}\, f\, x\, \text{Sinh}[c + d\, x] -$
$648\, b^3\, d^3\, e^2\, e^{3c}\, f\, x\, \text{Sinh}[c + d\, x] + 324\, a\, b^2\, d^2\, e^2\, e^{3c}\, f\, \text{Sinh}[2\, (c + d\, x)] +$

$72\, b^3\, d^3\, e^3\, e^{3c}\, \text{Sinh}[3\, (c + d\, x)] + 216\, b^3\, d^3\, e^2\, e^{3c}\, f\, x\, \text{Sinh}[3\, (c + d\, x)] \Bigg)$

Problem 392: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e + f\, x)^2\, \text{Cosh}[c + d\, x]\, \text{Sinh}[c + d\, x]^3}{a + b\, \text{Sinh}[c + d\, x]}\, dx$$

Optimal (type 4, 578 leaves, 22 steps):

$$-\frac{a\, e\, f\, x}{2\, b^2\, d} - \frac{a\, f^2\, x^2}{4\, b^2\, d} + \frac{a^3\, (e + f\, x)^3}{3\, b^4\, f} - \frac{2\, a^2\, f\, (e + f\, x)\, \text{Cosh}[c + d\, x]}{b^3\, d^2} +$$
$$\frac{4\, f\, (e + f\, x)\, \text{Cosh}[c + d\, x]}{9\, b\, d^2} - \frac{a^3\, (e + f\, x)^2\, \text{Log}\left[1 + \frac{b\, e^{c+d\, x}}{a - \sqrt{a^2 + b^2}}\right]}{b^4\, d} - \frac{a^3\, (e + f\, x)^2\, \text{Log}\left[1 + \frac{b\, e^{c+d\, x}}{a + \sqrt{a^2 + b^2}}\right]}{b^4\, d} -$$
$$\frac{2\, a^3\, f\, (e + f\, x)\, \text{PolyLog}\left[2, -\frac{b\, e^{c+d\, x}}{a - \sqrt{a^2 + b^2}}\right]}{b^4\, d^2} - \frac{2\, a^3\, f\, (e + f\, x)\, \text{PolyLog}\left[2, -\frac{b\, e^{c+d\, x}}{a + \sqrt{a^2 + b^2}}\right]}{b^4\, d^2} +$$
$$\frac{2\, a^3\, f^2\, \text{PolyLog}\left[3, -\frac{b\, e^{c+d\, x}}{a - \sqrt{a^2 + b^2}}\right]}{b^4\, d^3} + \frac{2\, a^3\, f^2\, \text{PolyLog}\left[3, -\frac{b\, e^{c+d\, x}}{a + \sqrt{a^2 + b^2}}\right]}{b^4\, d^3} +$$
$$\frac{2\, a^2\, f^2\, \text{Sinh}[c + d\, x]}{b^3\, d^3} - \frac{4\, f^2\, \text{Sinh}[c + d\, x]}{9\, b\, d^3} + \frac{a^2\, (e + f\, x)^2\, \text{Sinh}[c + d\, x]}{b^3\, d} +$$
$$\frac{a\, f\, (e + f\, x)\, \text{Cosh}[c + d\, x]\, \text{Sinh}[c + d\, x]}{2\, b^2\, d^2} - \frac{a\, f^2\, \text{Sinh}[c + d\, x]^2}{4\, b^2\, d^3} - \frac{a\, (e + f\, x)^2\, \text{Sinh}[c + d\, x]^2}{2\, b^2\, d} -$$
$$\frac{2\, f\, (e + f\, x)\, \text{Cosh}[c + d\, x]\, \text{Sinh}[c + d\, x]^2}{9\, b\, d^2} + \frac{2\, f^2\, \text{Sinh}[c + d\, x]^3}{27\, b\, d^3} + \frac{(e + f\, x)^2\, \text{Sinh}[c + d\, x]^3}{3\, b\, d}$$

Result (type 4, 2318 leaves):

$$\frac{1}{432\, b^4\, d^3}\, e^{-3c} \Bigg(432\, a^3\, c^2\, d\, e\, e^{3c}\, f + 432\, i\, a^3\, c\, d\, e\, e^{3c}\, f\, \pi - 108\, a^3\, d\, e\, e^{3c}\, f\, \pi^2 +$$

$864\,a^3\,c\,d^2\,e\,e^{3\,c}\,f\,x + 432\,i\,a^3\,d^2\,e\,e^{3\,c}\,f\,\pi\,x + 432\,a^3\,d^3\,e\,e^{3\,c}\,f\,x^2 + 144\,a^3\,d^3\,e^{3\,c}\,f^2\,x^3 +$

$3456\,a^3\,d\,e\,e^{3\,c}\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,i\,c+\pi+2\,i\,d\,x)\right]}{\sqrt{a^2+b^2}}\right] -$

$432\,a^2\,b\,e^{2\,c}\,f^2\,\text{Cosh}[d\,x] + 108\,b^3\,e^{2\,c}\,f^2\,\text{Cosh}[d\,x] + 432\,a^2\,b\,e^{4\,c}\,f^2\,\text{Cosh}[d\,x] -$
$108\,b^3\,e^{4\,c}\,f^2\,\text{Cosh}[d\,x] - 432\,a^2\,b\,d\,e^{2\,c}\,f^2\,x\,\text{Cosh}[d\,x] + 108\,b^3\,d\,e^{2\,c}\,f^2\,x\,\text{Cosh}[d\,x] -$
$432\,a^2\,b\,d\,e^{4\,c}\,f^2\,x\,\text{Cosh}[d\,x] + 108\,b^3\,d\,e^{4\,c}\,f^2\,x\,\text{Cosh}[d\,x] - 216\,a^2\,b\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Cosh}[d\,x] +$
$54\,b^3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Cosh}[d\,x] + 216\,a^2\,b\,d^2\,e^{4\,c}\,f^2\,x^2\,\text{Cosh}[d\,x] - 54\,b^3\,d^2\,e^{4\,c}\,f^2\,x^2\,\text{Cosh}[d\,x] -$
$27\,a\,b^2\,e^{c}\,f^2\,\text{Cosh}[2\,d\,x] - 27\,a\,b^2\,e^{5\,c}\,f^2\,\text{Cosh}[2\,d\,x] - 54\,a\,b^2\,d\,e^{c}\,f^2\,x\,\text{Cosh}[2\,d\,x] +$
$54\,a\,b^2\,d\,e^{5\,c}\,f^2\,x\,\text{Cosh}[2\,d\,x] - 54\,a\,b^2\,d^2\,e^{c}\,f^2\,x^2\,\text{Cosh}[2\,d\,x] -$
$54\,a\,b^2\,d^2\,e^{5\,c}\,f^2\,x^2\,\text{Cosh}[2\,d\,x] - 4\,b^3\,f^2\,\text{Cosh}[3\,d\,x] + 4\,b^3\,e^{6\,c}\,f^2\,\text{Cosh}[3\,d\,x] -$
$12\,b^3\,d\,f^2\,x\,\text{Cosh}[3\,d\,x] - 12\,b^3\,d\,e^{6\,c}\,f^2\,x\,\text{Cosh}[3\,d\,x] - 18\,b^3\,d^2\,f^2\,x^2\,\text{Cosh}[3\,d\,x] +$
$18\,b^3\,d^2\,e^{6\,c}\,f^2\,x^2\,\text{Cosh}[3\,d\,x] - 864\,a^2\,b\,d\,e\,e^{3\,c}\,f\,\text{Cosh}[c+d\,x] + 216\,b^3\,d\,e\,e^{3\,c}\,f\,\text{Cosh}[c+d\,x] -$
$108\,a\,b^2\,d^2\,e^2\,e^{3\,c}\,\text{Cosh}[2\,(c+d\,x)] - 216\,a\,b^2\,d^2\,e\,e^{3\,c}\,f\,x\,\text{Cosh}[2\,(c+d\,x)] -$

$24\,b^3\,d\,e\,e^{3\,c}\,f\,\text{Cosh}[3\,(c+d\,x)] - 864\,a^3\,c\,d\,e\,e^{3\,c}\,f\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] -$

$432\,i\,a^3\,d\,e\,e^{3\,c}\,f\,\pi\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] -$

$864\,a^3\,d^2\,e\,e^{3\,c}\,f\,x\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] -$

$1728\,i\,a^3\,d\,e\,e^{3\,c}\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] -$

$864\,a^3\,c\,d\,e\,e^{3\,c}\,f\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] - 432\,i\,a^3\,d\,e\,e^{3\,c}\,f\,\pi$

$\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] - 864\,a^3\,d^2\,e\,e^{3\,c}\,f\,x\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] +$

$1728\,i\,a^3\,d\,e\,e^{3\,c}\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] -$

$432\,a^3\,d^2\,e^{3\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{(a^2+b^2)\,e^{2\,c}}}\right] -$

$432\,a^3\,d^2\,e^{3\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{(a^2+b^2)\,e^{2\,c}}}\right] - 432\,a^3\,d^2\,e^2\,e^{3\,c}\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]] +$

$432\,i\,a^3\,d\,e\,e^{3\,c}\,f\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]] + 864\,a^3\,c\,d\,e\,e^{3\,c}\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right] -$

$864\,a^3\,d\,e\,e^{3\,c}\,f\,\text{PolyLog}\left[2,\,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right] -$

$$864\, a^3\, d\, e\, e^{3c}\, f\, \text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] -$$

$$864\, a^3\, d\, e^{3c}\, f^2\, x\, \text{PolyLog}\left[2, -\frac{b\, e^{2c+d x}}{a\, e^c - \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] - 864\, a^3\, d\, e^{3c}\, f^2\, x$$

$$\text{PolyLog}\left[2, -\frac{b\, e^{2c+d x}}{a\, e^c + \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] + 864\, a^3\, e^{3c}\, f^2\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+d x}}{a\, e^c - \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] +$$

$$864\, a^3\, e^{3c}\, f^2\, \text{PolyLog}\left[3, -\frac{b\, e^{2c+d x}}{a\, e^c + \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] + 432\, a^2\, b\, e^{2c}\, f^2\, \text{Sinh}[d\, x] -$$

$$108\, b^3\, e^{2c}\, f^2\, \text{Sinh}[d\, x] + 432\, a^2\, b\, e^{4c}\, f^2\, \text{Sinh}[d\, x] - 108\, b^3\, e^{4c}\, f^2\, \text{Sinh}[d\, x] +$$
$$432\, a^2\, b\, d\, e^{2c}\, f^2\, x\, \text{Sinh}[d\, x] - 108\, b^3\, d\, e^{2c}\, f^2\, x\, \text{Sinh}[d\, x] - 432\, a^2\, b\, d\, e^{4c}\, f^2\, x\, \text{Sinh}[d\, x] +$$
$$108\, b^3\, d\, e^{4c}\, f^2\, x\, \text{Sinh}[d\, x] + 216\, a^2\, b\, d^2\, e^{2c}\, f^2\, x^2\, \text{Sinh}[d\, x] - 54\, b^3\, d^2\, e^{2c}\, f^2\, x^2\, \text{Sinh}[d\, x] +$$
$$216\, a^2\, b\, d^2\, e^{4c}\, f^2\, x^2\, \text{Sinh}[d\, x] - 54\, b^3\, d^2\, e^{4c}\, f^2\, x^2\, \text{Sinh}[d\, x] + 27\, a\, b^2\, e^c\, f^2\, \text{Sinh}[2\, d\, x] -$$
$$27\, a\, b^2\, e^{5c}\, f^2\, \text{Sinh}[2\, d\, x] + 54\, a\, b^2\, d\, e^c\, f^2\, x\, \text{Sinh}[2\, d\, x] + 54\, a\, b^2\, d\, e^{5c}\, f^2\, x\, \text{Sinh}[2\, d\, x] +$$
$$54\, a\, b^2\, d^2\, e^c\, f^2\, x^2\, \text{Sinh}[2\, d\, x] - 54\, a\, b^2\, d^2\, e^{5c}\, f^2\, x^2\, \text{Sinh}[2\, d\, x] + 4\, b^3\, f^2\, \text{Sinh}[3\, d\, x] +$$
$$4\, b^3\, e^{6c}\, f^2\, \text{Sinh}[3\, d\, x] + 12\, b^3\, d\, f^2\, x\, \text{Sinh}[3\, d\, x] - 12\, b^3\, d\, e^{6c}\, f^2\, x\, \text{Sinh}[3\, d\, x] +$$
$$18\, b^3\, d^2\, f^2\, x^2\, \text{Sinh}[3\, d\, x] + 18\, b^3\, d^2\, e^{6c}\, f^2\, x^2\, \text{Sinh}[3\, d\, x] + 432\, a^2\, b\, d^2\, e^2\, e^{3c}\, \text{Sinh}[c + d\, x] -$$
$$108\, b^3\, d^2\, e^2\, e^{3c}\, \text{Sinh}[c + d\, x] + 864\, a^2\, b\, d^2\, e\, e^{3c}\, f\, x\, \text{Sinh}[c + d\, x] -$$
$$216\, b^3\, d^2\, e\, e^{3c}\, f\, x\, \text{Sinh}[c + d\, x] + 108\, a\, b^2\, d\, e\, e^{3c}\, f\, \text{Sinh}\left[2\, (c + d\, x)\right] +$$

$$\left. 36\, b^3\, d^2\, e^2\, e^{3c}\, \text{Sinh}\left[3\, (c + d\, x)\right] + 72\, b^3\, d^2\, e\, e^{3c}\, f\, x\, \text{Sinh}\left[3\, (c + d\, x)\right] \right)$$

Problem 393: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e + f\, x)\, \text{Cosh}[c + d\, x]\, \text{Sinh}[c + d\, x]^3}{a + b\, \text{Sinh}[c + d\, x]}\, dx$$

Optimal (type 4, 348 leaves, 18 steps):

$$-\frac{a\, f\, x}{4\, b^2\, d} + \frac{a^3\, (e + f\, x)^2}{2\, b^4\, f} - \frac{a^2\, f\, \text{Cosh}[c + d\, x]}{b^3\, d^2} + \frac{f\, \text{Cosh}[c + d\, x]}{3\, b\, d^2} -$$
$$\frac{f\, \text{Cosh}[c + d\, x]^3}{9\, b\, d^2} - \frac{a^3\, (e + f\, x)\, \text{Log}\left[1 + \frac{b\, e^{c+d x}}{a - \sqrt{a^2+b^2}}\right]}{b^4\, d} - \frac{a^3\, (e + f\, x)\, \text{Log}\left[1 + \frac{b\, e^{c+d x}}{a + \sqrt{a^2+b^2}}\right]}{b^4\, d} -$$
$$\frac{a^3\, f\, \text{PolyLog}\left[2, -\frac{b\, e^{c+d x}}{a - \sqrt{a^2+b^2}}\right]}{b^4\, d^2} - \frac{a^3\, f\, \text{PolyLog}\left[2, -\frac{b\, e^{c+d x}}{a + \sqrt{a^2+b^2}}\right]}{b^4\, d^2} + \frac{a^2\, (e + f\, x)\, \text{Sinh}[c + d\, x]}{b^3\, d} +$$
$$\frac{a\, f\, \text{Cosh}[c + d\, x]\, \text{Sinh}[c + d\, x]}{4\, b^2\, d^2} - \frac{a\, (e + f\, x)\, \text{Sinh}[c + d\, x]^2}{2\, b^2\, d} + \frac{(e + f\, x)\, \text{Sinh}[c + d\, x]^3}{3\, b\, d}$$

Result (type 4, 769 leaves):

$$-\frac{1}{72\,b^4\,d^2}\Bigg(-36\,a^3\,c^2\,f-36\,i\,a^3\,c\,f\,\pi+9\,a^3\,f\,\pi^2-72\,a^3\,c\,d\,f\,x-36\,i\,a^3\,d\,f\,\pi\,x-36\,a^3\,d^2\,f\,x^2-$$
$$288\,a^3\,f\,\mathrm{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\,\mathrm{ArcTan}\Big[\frac{(a+i\,b)\,\mathrm{Cot}\big[\frac{1}{4}\,(2\,i\,c+\pi+2\,i\,d\,x)\big]}{\sqrt{a^2+b^2}}\Big]+$$
$$72\,a^2\,b\,f\,\mathrm{Cosh}[c+d\,x]-18\,b^3\,f\,\mathrm{Cosh}[c+d\,x]+18\,a\,b^2\,d\,e\,\mathrm{Cosh}[2\,(c+d\,x)]+$$
$$18\,a\,b^2\,d\,f\,x\,\mathrm{Cosh}[2\,(c+d\,x)]+2\,b^3\,f\,\mathrm{Cosh}[3\,(c+d\,x)]+$$
$$72\,a^3\,c\,f\,\mathrm{Log}\Big[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+36\,i\,a^3\,f\,\pi\,\mathrm{Log}\Big[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$
$$72\,a^3\,d\,f\,x\,\mathrm{Log}\Big[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+144\,i\,a^3\,f\,\mathrm{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]$$
$$\mathrm{Log}\Big[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+72\,a^3\,c\,f\,\mathrm{Log}\Big[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$
$$36\,i\,a^3\,f\,\pi\,\mathrm{Log}\Big[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+72\,a^3\,d\,f\,x\,\mathrm{Log}\Big[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]-$$
$$144\,i\,a^3\,f\,\mathrm{ArcSin}\Big[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\Big]\,\mathrm{Log}\Big[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$
$$72\,a^3\,d\,e\,\mathrm{Log}[a+b\,\mathrm{Sinh}[c+d\,x]]-36\,i\,a^3\,f\,\pi\,\mathrm{Log}[a+b\,\mathrm{Sinh}[c+d\,x]]-$$
$$72\,a^3\,c\,f\,\mathrm{Log}\Big[1+\frac{b\,\mathrm{Sinh}[c+d\,x]}{a}\Big]+72\,a^3\,f\,\mathrm{PolyLog}\Big[2,\frac{\left(a-\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]+$$
$$72\,a^3\,f\,\mathrm{PolyLog}\Big[2,\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\Big]-72\,a^2\,b\,d\,e\,\mathrm{Sinh}[c+d\,x]+$$
$$18\,b^3\,d\,e\,\mathrm{Sinh}[c+d\,x]-72\,a^2\,b\,d\,f\,x\,\mathrm{Sinh}[c+d\,x]+18\,b^3\,d\,f\,x\,\mathrm{Sinh}[c+d\,x]-$$
$$9\,a\,b^2\,f\,\mathrm{Sinh}[2\,(c+d\,x)]-6\,b^3\,d\,e\,\mathrm{Sinh}[3\,(c+d\,x)]-6\,b^3\,d\,f\,x\,\mathrm{Sinh}[3\,(c+d\,x)]\Bigg)$$

Problem 395: Attempted integration timed out after 120 seconds.

$$\int\frac{\mathrm{Cosh}[c+d\,x]\,\mathrm{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\mathrm{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},x\right]$$

Result (type 1, 1 leaves) :

???

Problem 396: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1038 leaves, 38 steps) :

$$\frac{3 a^2 e f^2 x}{4 b^3 d^2}+\frac{3 a^2 f^3 x^2}{8 b^3 d^2}+\frac{a^4 (e+f x)^4}{4 b^5 f}+\frac{a^2 (e+f x)^4}{8 b^3 f}-\frac{(e+f x)^4}{32 b f}-\frac{6 a^3 f^2 (e+f x) \text{Cosh}[c+d x]}{b^4 d^3}-$$
$$\frac{4 a f^2 (e+f x) \text{Cosh}[c+d x]}{3 b^2 d^3}-\frac{a^3 (e+f x)^3 \text{Cosh}[c+d x]}{b^4 d}-\frac{3 a^2 f^3 \text{Cosh}[c+d x]^2}{8 b^3 d^4}-$$
$$\frac{3 a^2 f (e+f x)^2 \text{Cosh}[c+d x]^2}{4 b^3 d^2}-\frac{2 a f^2 (e+f x) \text{Cosh}[c+d x]^3}{9 b^2 d^3}-\frac{a (e+f x)^3 \text{Cosh}[c+d x]^3}{3 b^2 d}-$$
$$\frac{3 f^3 \text{Cosh}[4 c+4 d x]}{1024 b d^4}-\frac{3 f (e+f x)^2 \text{Cosh}[4 c+4 d x]}{128 b d^2}-\frac{a^3 \sqrt{a^2+b^2} (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d}+$$
$$\frac{a^3 \sqrt{a^2+b^2} (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d}-\frac{3 a^3 \sqrt{a^2+b^2} f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^2}+$$
$$\frac{3 a^3 \sqrt{a^2+b^2} f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^2}+$$
$$\frac{6 a^3 \sqrt{a^2+b^2} f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^3}-$$
$$\frac{6 a^3 \sqrt{a^2+b^2} f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^3}-$$
$$\frac{6 a^3 \sqrt{a^2+b^2} f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^4}+\frac{6 a^3 \sqrt{a^2+b^2} f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^4}+$$
$$\frac{6 a^3 f^3 \text{Sinh}[c+d x]}{b^4 d^4}+\frac{14 a f^3 \text{Sinh}[c+d x]}{9 b^2 d^4}+\frac{3 a^3 f (e+f x)^2 \text{Sinh}[c+d x]}{b^4 d^2}+$$
$$\frac{2 a f (e+f x)^2 \text{Sinh}[c+d x]}{3 b^2 d^2}+\frac{3 a^2 f^2 (e+f x) \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b^3 d^3}+$$
$$\frac{a^2 (e+f x)^3 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 b^3 d}+\frac{a f (e+f x)^2 \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{3 b^2 d^2}+$$
$$\frac{2 a f^3 \text{Sinh}[c+d x]^3}{27 b^2 d^4}+\frac{3 f^2 (e+f x) \text{Sinh}[4 c+4 d x]}{256 b d^3}+\frac{(e+f x)^3 \text{Sinh}[4 c+4 d x]}{32 b d}$$

Result (type 4, 6279 leaves):

$$-\frac{e^3 \left(\frac{c}{d}+x-\frac{2 a \text{ArcTan}\left[\frac{b-a \text{Tanh}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\, d}\right)}{8 b}-$$

$$\frac{1}{16 b} 3 e^2 f \left(x^2+\frac{1}{d^2} 2 a \left(\frac{i \pi \text{ArcTanh}\left[\frac{-b+a \text{Tanh}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}}+\frac{1}{\sqrt{-a^2-b^2}}\right.\right.$$

$$\left(2\left(-i c+\text{ArcCos}\left[-\frac{i a}{b}\right]\right)\text{ArcTanh}\left[\frac{(a+i b)\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]+\right.$$

$$(-2 i c+\pi-2 i d x)\,\text{ArcTanh}\left[\frac{(a-i b)\,\text{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]+2 i\,\text{ArcTanh}\left[\frac{(a+i b)\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

$$\left.\left(b\left(i a+b+i\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]-2 i\,\text{ArcTanh}\left[\frac{(a+i b)\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

$$\left.\left(b\left(a-i b+\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]+$$

$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]-2 i\,\text{ArcTanh}\left[\frac{(a+i b)\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]-2 i\,\text{ArcTanh}\left[\right.\right.$$

$$\left.\left.\frac{(a-i b)\,\text{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\text{Log}\left[\frac{\sqrt{-a^2-b^2}\;e^{\frac{1}{4}(-2 c-i\pi-2 d x)}}{\sqrt{2}\,\sqrt{-i b}\,\sqrt{a+b\,\text{Sinh}[c+d x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]+2 i\left(\text{ArcTanh}\left[\frac{(a+i b)\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]+\right.\right.$$

$$\left.\left.\text{ArcTanh}\left[\frac{(a-i b)\,\text{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\right)$$

$$\text{Log}\left[\frac{\sqrt{-a^2-b^2}\;e^{\frac{1}{4}(2 c+i\pi+2 d x)}}{\sqrt{2}\,\sqrt{-i b}\,\sqrt{a+b\,\text{Sinh}[c+d x]}}\right]+i\left(\text{PolyLog}\left[2,\right.\right.$$

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

$$\left.\left(b\left(i a+b+i\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]-\text{PolyLog}\left[2,\right.$$

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

$$\left.\left.\left.\left(b\left(i a+b+i\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]\right)\right)-\frac{1}{8 b}$$

$$
\begin{aligned}
&e f^2 \left(x^3-\left(3 a e^c \left(d^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-d^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+\right.\right.\right.\\
&\quad 2 d x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad 2 d x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad 2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+\\
&\quad \left.\left.\left.2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\right)\right)\Big/\left(d^3 \sqrt{\left(a^2+b^2\right) e^{2 c}}\right)\right)-\frac{1}{32 b}\\
&f^3 \left(x^4-\left(4 a e^c \left(d^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-d^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+\right.\right.\right.\\
&\quad 3 d^2 x^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad 3 d^2 x^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad 6 d x \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+\\
&\quad 6 d x \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 \text{PolyLog}\left[4,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad \left.\left.\left.6 \text{PolyLog}\left[4,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\right)\right)\Big/\left(d^4 \sqrt{\left(a^2+b^2\right) e^{2 c}}\right)\right)-\\
&\frac{1}{32 b^3} e f^2 \left(2 \left(4 a^2+b^2\right) x^3-\left(6 a \left(4 a^2+3 b^2\right) e^c \left(d^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\right.\right.\right.\\
&\quad d^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+2 d x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad 2 d x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\\
&\quad \left.\left.\left.2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\right)\right)\Big/\right.
\end{aligned}
$$

$$\left(d^3\sqrt{(a^2+b^2)\,e^{2c}}\right)-\frac{24\,a\,b\,\text{Cosh}[d\,x]\,\left((2+d^2x^2)\,\text{Cosh}[c]-2\,d\,x\,\text{Sinh}[c]\right)}{d^3}+$$

$$\frac{3\,b^2\,\text{Cosh}[2\,d\,x]\,\left(-2\,d\,x\,\text{Cosh}[2\,c]+(1+2\,d^2x^2)\,\text{Sinh}[2\,c]\right)}{d^3}-$$

$$\frac{24\,a\,b\,\left(-2\,d\,x\,\text{Cosh}[c]+(2+d^2x^2)\,\text{Sinh}[c]\right)\,\text{Sinh}[d\,x]}{d^3}+$$

$$\left.\frac{3\,b^2\,\left((1+2\,d^2x^2)\,\text{Cosh}[2\,c]-2\,d\,x\,\text{Sinh}[2\,c]\right)\,\text{Sinh}[2\,d\,x]}{d^3}\right)-$$

$$\frac{1}{64\,b^3}\,f^3\left((4\,a^2+b^2)\,x^4-\frac{1}{d^4\sqrt{(a^2+b^2)\,e^{2c}}}\,4\,a\,(4\,a^2+3\,b^2)\,e^c\right.$$

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

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

$$6\,d\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+6\,d\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$\left.6\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-6\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]\right)-$$

$$\frac{16\,a\,b\,\text{Cosh}[d\,x]\,\left(d\,x\,(6+d^2x^2)\,\text{Cosh}[c]-3\,(2+d^2x^2)\,\text{Sinh}[c]\right)}{d^4}+$$

$$\frac{1}{d^4}\,b^2\,\text{Cosh}[2\,d\,x]\,\left(-3\,(1+2\,d^2x^2)\,\text{Cosh}[2\,c]+2\,d\,x\,(3+2\,d^2x^2)\,\text{Sinh}[2\,c]\right)-$$

$$\frac{1}{d^4}16\,a\,b\,\left(-3\,(2+d^2x^2)\,\text{Cosh}[c]+d\,x\,(6+d^2x^2)\,\text{Sinh}[c]\right)\,\text{Sinh}[d\,x]+\frac{1}{d^4}$$

$$\left.b^2\,\left(2\,d\,x\,(3+2\,d^2x^2)\,\text{Cosh}[2\,c]-3\,(1+2\,d^2x^2)\,\text{Sinh}[2\,c]\right)\,\text{Sinh}[2\,d\,x]\right)+$$

$$\frac{1}{16}\,f^3\left(\frac{(16\,a^4+12\,a^2b^2+b^4)\,x^4}{4\,b^5}-\frac{1}{b^5\,d^4\sqrt{(a^2+b^2)\,e^{2c}}}\right.$$

$$a\,(16\,a^4+20\,a^2b^2+5\,b^4)\,e^c$$

$$\left(d^3 x^3 \text{Log}\left[1+\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-d^3 x^3 \text{Log}\left[1+\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+\right.$$
$$3 d^2 x^2 \text{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-3 d^2 x^2 \text{PolyLog}\left[2,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-$$
$$6 d x \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+6 d x \text{PolyLog}\left[3,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]+$$
$$\left.6 \text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c-\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]-6 \text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]\right)+$$
$$\left(\left(2 a^2+b^2\right)\left(-\frac{24 a \text{Cosh}[c]}{b^4 d^4}+\frac{24 a \text{Sinh}[c]}{b^4 d^4}\right)+\left(2 a^3+a b^2\right)\left(-\frac{24 x \text{Cosh}[c]}{b^4 d^3}+\frac{24 x \text{Sinh}[c]}{b^4 d^3}\right)+\right.$$
$$\left(2 a^3+a b^2\right)\left(-\frac{12 x^2 \text{Cosh}[c]}{b^4 d^2}+\frac{12 x^2 \text{Sinh}[c]}{b^4 d^2}\right)+$$
$$\left.\left(2 a^2+b^2\right)\left(-\frac{4 a x^3 \text{Cosh}[c]}{b^4 d}+\frac{4 a x^3 \text{Sinh}[c]}{b^4 d}\right)\right)\left(\text{Cosh}[d x]-\text{Sinh}[d x]\right)+$$
$$\left(-\frac{1}{b^4 d^3} 24 x\left(2 a^3 \text{Cosh}[c]+a b^2 \text{Cosh}[c]+2 a^3 \text{Sinh}[c]+a b^2 \text{Sinh}[c]\right)+\frac{1}{b^4 d^2}\right.$$
$$12 x^2\left(2 a^3 \text{Cosh}[c]+a b^2 \text{Cosh}[c]+2 a^3 \text{Sinh}[c]+a b^2 \text{Sinh}[c]\right)+$$
$$\left(2 a^2+b^2\right)\left(\frac{24 a \text{Cosh}[c]}{b^4 d^4}+\frac{24 a \text{Sinh}[c]}{b^4 d^4}\right)+$$
$$\left.\left(2 a^2+b^2\right)\left(-\frac{4 a x^3 \text{Cosh}[c]}{b^4 d}-\frac{4 a x^3 \text{Sinh}[c]}{b^4 d}\right)\right)\left(\text{Cosh}[d x]+\text{Sinh}[d x]\right)+$$
$$\left(\left(4 a^2+b^2\right)\left(-\frac{3 \text{Cosh}[2 c]}{8 b^3 d^4}+\frac{3 \text{Sinh}[2 c]}{8 b^3 d^4}\right)+\left(4 a^2+b^2\right)\left(-\frac{3 x \text{Cosh}[2 c]}{4 b^3 d^3}+\frac{3 x \text{Sinh}[2 c]}{4 b^3 d^3}\right)+\right.$$
$$\left(4 a^2+b^2\right)\left(-\frac{3 x^2 \text{Cosh}[2 c]}{4 b^3 d^2}+\frac{3 x^2 \text{Sinh}[2 c]}{4 b^3 d^2}\right)+$$
$$\left.\left(4 a^2+b^2\right)\left(-\frac{x^3 \text{Cosh}[2 c]}{2 b^3 d}+\frac{x^3 \text{Sinh}[2 c]}{2 b^3 d}\right)\right)\left(\text{Cosh}[2 d x]-\text{Sinh}[2 d x]\right)+$$
$$\left(\frac{1}{4 b^3 d^3} 3 x\left(4 a^2 \text{Cosh}[2 c]+b^2 \text{Cosh}[2 c]+4 a^2 \text{Sinh}[2 c]+b^2 \text{Sinh}[2 c]\right)-\frac{1}{4 b^3 d^2}\right.$$
$$3 x^2\left(4 a^2 \text{Cosh}[2 c]+b^2 \text{Cosh}[2 c]+4 a^2 \text{Sinh}[2 c]+b^2 \text{Sinh}[2 c]\right)+$$
$$\left(4 a^2+b^2\right)\left(-\frac{3 \text{Cosh}[2 c]}{8 b^3 d^4}-\frac{3 \text{Sinh}[2 c]}{8 b^3 d^4}\right)+$$
$$\left.\left(4 a^2+b^2\right)\left(\frac{x^3 \text{Cosh}[2 c]}{2 b^3 d}+\frac{x^3 \text{Sinh}[2 c]}{2 b^3 d}\right)\right)\left(\text{Cosh}[2 d x]+\text{Sinh}[2 d x]\right)+$$
$$\left(-\frac{4 a \text{Cosh}[3 c]}{27 b^2 d^4}-\frac{4 a x \text{Cosh}[3 c]}{9 b^2 d^3}-\frac{2 a x^2 \text{Cosh}[3 c]}{3 b^2 d^2}-\frac{2 a x^3 \text{Cosh}[3 c]}{3 b^2 d}+\frac{4 a \text{Sinh}[3 c]}{27 b^2 d^4}+\right.$$
$$\left.\frac{4 a x \text{Sinh}[3 c]}{9 b^2 d^3}+\frac{2 a x^2 \text{Sinh}[3 c]}{3 b^2 d^2}+\frac{2 a x^3 \text{Sinh}[3 c]}{3 b^2 d}\right)\left(\text{Cosh}[3 d x]-\text{Sinh}[3 d x]\right)+$$
$$\left(\frac{4 a \text{Cosh}[3 c]}{27 b^2 d^4}-\frac{4 a x \text{Cosh}[3 c]}{9 b^2 d^3}+\frac{2 a x^2 \text{Cosh}[3 c]}{3 b^2 d^2}-\frac{2 a x^3 \text{Cosh}[3 c]}{3 b^2 d}+\frac{4 a \text{Sinh}[3 c]}{27 b^2 d^4}-\right.$$

$$\frac{4\,a\,x\,\mathrm{Sinh}[3\,c]}{9\,b^2\,d^3}+\frac{2\,a\,x^2\,\mathrm{Sinh}[3\,c]}{3\,b^2\,d^2}-\frac{2\,a\,x^3\,\mathrm{Sinh}[3\,c]}{3\,b^2\,d}\Bigg)\,\big(\mathrm{Cosh}[3\,d\,x]+\mathrm{Sinh}[3\,d\,x]\big)+$$

$$\Bigg(-\frac{3\,\mathrm{Cosh}[4\,c]}{128\,b\,d^4}-\frac{3\,x\,\mathrm{Cosh}[4\,c]}{32\,b\,d^3}-\frac{3\,x^2\,\mathrm{Cosh}[4\,c]}{16\,b\,d^2}-\frac{x^3\,\mathrm{Cosh}[4\,c]}{4\,b\,d}+\frac{3\,\mathrm{Sinh}[4\,c]}{128\,b\,d^4}+$$

$$\frac{3\,x\,\mathrm{Sinh}[4\,c]}{32\,b\,d^3}+\frac{3\,x^2\,\mathrm{Sinh}[4\,c]}{16\,b\,d^2}+\frac{x^3\,\mathrm{Sinh}[4\,c]}{4\,b\,d}\Bigg)\,\big(\mathrm{Cosh}[4\,d\,x]-\mathrm{Sinh}[4\,d\,x]\big)+$$

$$\Bigg(-\frac{3\,\mathrm{Cosh}[4\,c]}{128\,b\,d^4}+\frac{3\,x\,\mathrm{Cosh}[4\,c]}{32\,b\,d^3}-\frac{3\,x^2\,\mathrm{Cosh}[4\,c]}{16\,b\,d^2}+\frac{x^3\,\mathrm{Cosh}[4\,c]}{4\,b\,d}-\frac{3\,\mathrm{Sinh}[4\,c]}{128\,b\,d^4}+$$

$$\frac{3\,x\,\mathrm{Sinh}[4\,c]}{32\,b\,d^3}-\frac{3\,x^2\,\mathrm{Sinh}[4\,c]}{16\,b\,d^2}+\frac{x^3\,\mathrm{Sinh}[4\,c]}{4\,b\,d}\Bigg)\,\big(\mathrm{Cosh}[4\,d\,x]+\mathrm{Sinh}[4\,d\,x]\big)\Bigg)-$$

$$\frac{1}{16\,b^3\,d}e^3\left(\left(4\,a^2+b^2\right)\,(c+d\,x)-\frac{2\,a\,\left(4\,a^2+3\,b^2\right)\,\mathrm{ArcTan}\left[\frac{b-a\,\mathrm{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}-\right.$$

$$4\,a\,b\,\mathrm{Cosh}[c+d\,x]+$$

$$\left.b^2\,\mathrm{Sinh}\big[2\,(c+d\,x)\big]\right)-$$

$$\frac{1}{32\,b^3\,d^2}3\,e^2\,f\left(\left(4\,a^2+b^2\right)\,(-c+d\,x)\,(c+d\,x)-\right.$$

$$8\,a\,b\,d\,x\,\mathrm{Cosh}[c+d\,x]-$$
$$b^2\,\mathrm{Cosh}\big[2\,(c+d\,x)\big]-$$
$$4\,a\,\left(4\,a^2+3\,b^2\right)$$

$$\left(-\frac{c\,\mathrm{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\,\sqrt{a^2+b^2}}\left((c+d\,x)\,\left(\mathrm{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\mathrm{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)+\right.\right.$$

$$\left.\left.\mathrm{PolyLog}\left[2,\,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\mathrm{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+$$

$$\left.8\,a\,b\,\mathrm{Sinh}[c+d\,x]+2\,b^2\,d\,x\,\mathrm{Sinh}\big[2\,(c+d\,x)\big]\right)+\frac{1}{96\,b^5\,d}$$

$$e^3 \left(6 \left(16 a^4 + 12 a^2 b^2 + b^4\right) (c + d x) - \frac{12 a \left(16 a^4 + 20 a^2 b^2 + 5 b^4\right) \text{ArcTan}\left[\frac{b - a \text{Tanh}\left[\frac{1}{2} (c+d x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2 - b^2}} - 48 a b \left(2 a^2 + b^2\right) \text{Cosh}[c + d x] - 8 a b^3 \text{Cosh}[3 (c + d x)] + 6 b^2 \left(4 a^2 + b^2\right) \text{Sinh}[2 (c + d x)] + 3 b^4 \text{Sinh}[4 (c + d x)]\right) +$$

$$\frac{1}{384 b^5 d^2} e^2 f \left(-576 a^4 c^2 - 432 a^2 b^2 c^2 - 36 b^4 c^2 + 576 a^4 d^2 x^2 + 432 a^2 b^2 d^2 x^2 + 36 b^4 d^2 x^2 - 576 a b \left(2 a^2 + b^2\right) d x \text{Cosh}[c + d x] - 36 \left(4 a^2 b^2 + b^4\right) \text{Cosh}[2 (c + d x)] - 96 a b^3 d x \text{Cosh}[3 (c + d x)] - 9 b^4 \text{Cosh}[4 (c + d x)] - 144 a \left(16 a^4 + 20 a^2 b^2 + 5 b^4\right) \left(-\frac{c \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2 - b^2}} + \frac{1}{2 \sqrt{a^2 + b^2}} \left((c + d x) \left(\text{Log}\left[1 + \frac{b e^{c+d x}}{a - \sqrt{a^2 + b^2}}\right] - \text{Log}\left[1 + \frac{b e^{c+d x}}{a + \sqrt{a^2 + b^2}}\right]\right) + \text{PolyLog}\left[2, \frac{b e^{c+d x}}{-a + \sqrt{a^2 + b^2}}\right] - \text{PolyLog}\left[2, -\frac{b e^{c+d x}}{a + \sqrt{a^2 + b^2}}\right]\right)\right) + 1152 a^3 b \text{Sinh}[c + d x] + 576 a b^3 \text{Sinh}[c + d x] + 288 a^2 b^2 d x \text{Sinh}[2 (c + d x)] + 72 b^4 d x \text{Sinh}[2 (c + d x)] + 32 a b^3 \text{Sinh}[3 (c + d x)] + 36 b^4 d x \text{Sinh}[4 (c + d x)]\right) +$$

$$\frac{1}{2304 b^5 d^3} e f^2 \left(2304 a^4 d^3 x^3 + 1728 a^2 b^2 d^3 x^3 + 144 b^4 d^3 x^3 - 3456 a b \left(2 a^2 + b^2\right) \left(2 + d^2 x^2\right) \text{Cosh}[c + d x] - 432 b^2 \left(4 a^2 + b^2\right) d x \text{Cosh}[2 (c + d x)] -\right.$$

$$128\,a\,b^3\,\text{Cosh}[3\,(c+d\,x)] - 576\,a\,b^3\,d^2\,x^2\,\text{Cosh}[3\,(c+d\,x)] -$$
$$108\,b^4\,d\,x\,\text{Cosh}[4\,(c+d\,x)] - \frac{1}{\sqrt{(a^2+b^2)\,e^{2c}}}$$
$$432\,a\,(16\,a^4+20\,a^2\,b^2+5\,b^4)\,e^c$$
$$\Bigg(d^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\Big] - d^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\Big] +$$
$$2\,d\,x\,\text{PolyLog}\Big[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\Big] - 2\,d\,x\,\text{PolyLog}\Big[2,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\Big] -$$
$$2\,\text{PolyLog}\Big[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\Big] + 2\,\text{PolyLog}\Big[3,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\Big]\Bigg) +$$
$$13824\,a^3\,b\,d\,x\,\text{Sinh}[c+d\,x] + 6912\,a\,b^3\,d\,x\,\text{Sinh}[c+d\,x] + 864\,a^2\,b^2\,\text{Sinh}[2\,(c+d\,x)] +$$
$$216\,b^4\,\text{Sinh}[2\,(c+d\,x)] + 1728\,a^2\,b^2\,d^2\,x^2\,\text{Sinh}[2\,(c+d\,x)] +$$
$$432\,b^4\,d^2\,x^2\,\text{Sinh}[2\,(c+d\,x)] + 384\,a\,b^3\,d\,x\,\text{Sinh}[3\,(c+d\,x)] +$$
$$27\,b^4\,\text{Sinh}[4\,(c+d\,x)] + 216\,b^4\,d^2\,x^2\,\text{Sinh}[4\,(c+d\,x)]\Bigg)$$

Problem 397: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^2\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 755 leaves, 31 steps):

$$\frac{a^2 f^2 x}{4 b^3 d^2}+\frac{a^4 (e+f x)^3}{3 b^5 f}+\frac{a^2 (e+f x)^3}{6 b^3 f}-\frac{(e+f x)^3}{24 b f}-\frac{2 a^3 f^2 \text{Cosh}[c+d x]}{b^4 d^3}-$$
$$\frac{4 a f^2 \text{Cosh}[c+d x]}{9 b^2 d^3}-\frac{a^3 (e+f x)^2 \text{Cosh}[c+d x]}{b^4 d}-\frac{a^2 f (e+f x) \text{Cosh}[c+d x]^2}{2 b^3 d^2}-$$
$$\frac{2 a f^2 \text{Cosh}[c+d x]^3}{27 b^2 d^3}-\frac{a (e+f x)^2 \text{Cosh}[c+d x]^3}{3 b^2 d}-\frac{f (e+f x) \text{Cosh}[4 c+4 d x]}{64 b d^2}-$$
$$\frac{a^3 \sqrt{a^2+b^2} (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d}+\frac{a^3 \sqrt{a^2+b^2} (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d}-$$
$$\frac{2 a^3 \sqrt{a^2+b^2} f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^2}+\frac{2 a^3 \sqrt{a^2+b^2} f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^2}+$$
$$\frac{2 a^3 \sqrt{a^2+b^2} f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^5 d^3}-\frac{2 a^3 \sqrt{a^2+b^2} f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^5 d^3}+$$
$$\frac{2 a^3 f (e+f x) \text{Sinh}[c+d x]}{b^4 d^2}+\frac{4 a f (e+f x) \text{Sinh}[c+d x]}{9 b^2 d^2}+$$
$$\frac{a^2 f^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b^3 d^3}+\frac{a^2 (e+f x)^2 \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{2 b^3 d}+$$
$$\frac{2 a f (e+f x) \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{9 b^2 d^2}+\frac{f^2 \text{Sinh}[4 c+4 d x]}{256 b d^3}+\frac{(e+f x)^2 \text{Sinh}[4 c+4 d x]}{32 b d}$$

Result (type 4, 3550 leaves):

$$-\frac{e^2 \left(\frac{c}{d}+x-\frac{2 a \text{ArcTan}\left[\frac{b-a \text{Tanh}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\, d}\right)}{8 b}-$$

$$\frac{1}{8 b} e f \left(x^2+\frac{1}{d^2} 2 a \left(\frac{i \pi \text{ArcTanh}\left[\frac{-b+a \text{Tanh}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}}+\frac{1}{\sqrt{-a^2-b^2}}\left(2 \left(-i c+\text{ArcCos}\left[-\frac{i a}{b}\right]\right)\right.\right.\right.$$
$$\text{ArcTanh}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]+(-2 i c+\pi-2 i d x)$$
$$\text{ArcTanh}\left[\frac{(a-i b) \text{Tan}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]-$$
$$\left(\text{ArcCos}\left[-\frac{i a}{b}\right]+2 i \text{ArcTanh}\left[\frac{(a+i b) \text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$
$$\text{Log}\left[\left((i a+b)\left(a+i\left(b+\sqrt{-a^2-b^2}\right)\right)\left(-i+\text{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]\right)\right)\right]\Big/$$

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

$$\left(\text{ArcCos}\left[-\frac{\mathrm{i}\, a}{b}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{\left(a+\mathrm{i}\, b\right)\text{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\, c+\pi+2\,\mathrm{i}\, d\, x\right)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

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

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

$$\left.\frac{\left(a-\mathrm{i}\, b\right)\text{Tan}\left[\frac{1}{4}\left(2\,\mathrm{i}\, c+\pi+2\,\mathrm{i}\, d\, x\right)\right]}{\sqrt{-a^2-b^2}}\Big]\right)\text{Log}\left[\frac{\sqrt{-a^2-b^2}\; e^{\frac{1}{4}\left(-2\, c-\mathrm{i}\,\pi-2\, d\, x\right)}}{\sqrt{2}\,\sqrt{-\mathrm{i}\, b}\,\sqrt{a+b\,\text{Sinh}[c+d\, x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{\mathrm{i}\, a}{b}\right]+2\,\mathrm{i}\left(\text{ArcTanh}\left[\frac{\left(a+\mathrm{i}\, b\right)\text{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\, c+\pi+2\,\mathrm{i}\, d\, x\right)\right]}{\sqrt{-a^2-b^2}}\right]+\right.\right.$$

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

$$\text{Log}\left[\frac{\sqrt{-a^2-b^2}\; e^{\frac{1}{4}\left(2\, c+\mathrm{i}\,\pi+2\, d\, x\right)}}{\sqrt{2}\,\sqrt{-\mathrm{i}\, b}\,\sqrt{a+b\,\text{Sinh}[c+d\, x]}}\right]+\mathrm{i}\,\Big(\text{PolyLog}\Big[2,$$

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

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

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

$$\left.\left.\left(b\left(\mathrm{i}\, a+b+\mathrm{i}\sqrt{-a^2-b^2}\,\text{Cot}\left[\frac{1}{4}\left(2\,\mathrm{i}\, c+\pi+2\,\mathrm{i}\, d\, x\right)\right]\right)\right)\Big]\Big)\right)\right)-\frac{1}{24\, b}$$

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

$$2\, d\, x\,\text{PolyLog}\left[2,-\frac{b\, e^{2\, c+d\, x}}{a\, e^c-\sqrt{\left(a^2+b^2\right)\, e^{2\, c}}}\right]-$$

$$2\, d\, x\,\text{PolyLog}\left[2,-\frac{b\, e^{2\, c+d\, x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\, c}}}\right]-$$

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

$$2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]\Bigg)\Bigg)\Bigg/\left(d^3\sqrt{\left(a^2+b^2\right)e^{2c}}\right)\Bigg)-$$

$$\frac{1}{96\,b^3}f^2\Bigg(2\left(4a^2+b^2\right)x^3-\Bigg(6a\left(4a^2+3b^2\right)e^{c}\Bigg(d^2x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$d^2x^2\,\text{Log}\left[1+\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+2\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$2\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-$$

$$2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(d^3\sqrt{\left(a^2+b^2\right)e^{2c}}\right)-\frac{24\,a\,b\,\text{Cosh}[d\,x]\left(\left(2+d^2x^2\right)\text{Cosh}[c]-2\,d\,x\,\text{Sinh}[c]\right)}{d^3}+$$

$$\frac{3\,b^2\,\text{Cosh}[2\,d\,x]\left(-2\,d\,x\,\text{Cosh}[2\,c]+\left(1+2\,d^2x^2\right)\text{Sinh}[2\,c]\right)}{d^3}-$$

$$\frac{24\,a\,b\left(-2\,d\,x\,\text{Cosh}[c]+\left(2+d^2x^2\right)\text{Sinh}[c]\right)\text{Sinh}[d\,x]}{d^3}+$$

$$\frac{3\,b^2\left(\left(1+2\,d^2x^2\right)\text{Cosh}[2\,c]-2\,d\,x\,\text{Sinh}[2\,c]\right)\text{Sinh}[2\,d\,x]}{d^3}\Bigg)-$$

$$\frac{1}{16\,b^3\,d}e^2\Bigg(\left(4a^2+b^2\right)\left(c+d\,x\right)-$$

$$\frac{2\,a\left(4a^2+3b^2\right)\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\left(c+d\,x\right)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}-$$

$$4\,a\,b\,\text{Cosh}[c+d\,x]+$$

$$b^2\,\text{Sinh}\left[2\left(c+d\,x\right)\right]\Bigg)-\frac{1}{16\,b^3\,d^2}e\,f\Bigg(\left(4a^2+b^2\right)$$

$$\left(-c+d\,x\right)\left(c+d\,x\right)-8\,a$$

b
d
x
$\text{Cosh}[c + d\,x] - b^2$
$\text{Cosh}[2\,(c + d\,x)] - 4$
a
$(4\,a^2 + 3\,b^2)$

$$\left(-\frac{c\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}} + \frac{1}{2\sqrt{a^2+b^2}}\left((c+d\,x)\left(\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right] - \text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right) + \text{PolyLog}\left[2, \frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right] - \text{PolyLog}\left[2, -\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right) +$$

$$8\,a\,b\,\text{Sinh}[c + d\,x] + 2\,b^2\,d\,x\,\text{Sinh}[2\,(c + d\,x)]\Bigg) + \frac{1}{96\,b^5\,d}$$

$$e^2\left(6\,(16\,a^4 + 12\,a^2\,b^2 + b^4)\,(c + d\,x) - \frac{12\,a\,(16\,a^4 + 20\,a^2\,b^2 + 5\,b^4)\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}} -\right.$$

48
a
b
$(2\,a^2 + b^2)$
$\text{Cosh}[c + d\,x] - 8$
a
b^3
$\text{Cosh}[3\,(c + d\,x)] + 6$
b^2
$(4\,a^2 + b^2)$
$\text{Sinh}[2\,(c + d\,x)] + 3$
b^4

$$\left.\text{Sinh}[4\,(c + d\,x)]\right) +$$

$$\frac{1}{576\,b^5\,d^2}\,e\,f\,\Bigg(-576\,a^4\,c^2-432\,a^2\,b^2\,c^2-36\,b^4\,c^2+576\,a^4\,d^2\,x^2+432\,a^2\,b^2\,d^2\,x^2+36\,b^4\,d^2\,x^2-576\,a\,b\,\left(2\,a^2+b^2\right)\,d\,x\,\text{Cosh}[c+d\,x]-36\,\left(4\,a^2\,b^2+b^4\right)\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]-96\,a\,b^3\,d\,x\,\text{Cosh}\left[3\,\left(c+d\,x\right)\right]-9\,b^4\,\text{Cosh}\left[4\,\left(c+d\,x\right)\right]-144\,a\,\left(16\,a^4+20\,a^2\,b^2+5\,b^4\right)\,\left(-\frac{c\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\,\sqrt{a^2+b^2}}\left(\left(c+d\,x\right)\,\left(\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)+\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+1152\,a^3\,b\,\text{Sinh}[c+d\,x]+576\,a\,b^3\,\text{Sinh}[c+d\,x]+288\,a^2\,b^2\,d\,x\,\text{Sinh}\left[2\,\left(c+d\,x\right)\right]+72\,b^4\,d\,x\,\text{Sinh}\left[2\,\left(c+d\,x\right)\right]+32\,a\,b^3\,\text{Sinh}\left[3\,\left(c+d\,x\right)\right]+36\,b^4\,d\,x\,\text{Sinh}\left[4\,\left(c+d\,x\right)\right]\Bigg)+$$

$$\frac{1}{6912\,b^5\,d^3}\,f^2\,\Bigg(2304\,a^4\,d^3\,x^3+1728\,a^2\,b^2\,d^3\,x^3+144\,b^4\,d^3\,x^3-3456\,a\,b\,\left(2\,a^2+b^2\right)\,\left(2+d^2\,x^2\right)\,\text{Cosh}[c+d\,x]-432\,b^2\,\left(4\,a^2+b^2\right)\,d\,x\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]-128\,a\,b^3\,\text{Cosh}\left[3\,\left(c+d\,x\right)\right]-576\,a\,b^3\,d^2\,x^2\,\text{Cosh}\left[3\,\left(c+d\,x\right)\right]-108\,b^4\,d\,x\,\text{Cosh}\left[4\,\left(c+d\,x\right)\right]-\frac{1}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}432\,a\,\left(16\,a^4+20\,a^2\,b^2+5\,b^4\right)\,e^c\,\left(d^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-d^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+2\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-\right.$$

$$2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]\Bigg)+$$
$$13824\,a^3\,b\,d\,x\,\text{Sinh}[c+d\,x]+6912\,a\,b^3\,d\,x\,\text{Sinh}[c+d\,x]+$$
$$864\,a^2\,b^2\,\text{Sinh}[2\,(c+d\,x)]+$$
$$216\,b^4\,\text{Sinh}[2\,(c+d\,x)]+$$
$$1728\,a^2\,b^2\,d^2\,x^2\,\text{Sinh}[2\,(c+d\,x)]+$$
$$432\,b^4\,d^2\,x^2\,\text{Sinh}[2\,(c+d\,x)]+$$
$$384\,a\,b^3\,d\,x\,\text{Sinh}[3\,(c+d\,x)]+$$
$$27\,b^4\,\text{Sinh}[4\,(c+d\,x)]+$$
$$216\,b^4\,d^2\,x^2\,\text{Sinh}[4\,(c+d\,x)]\Bigg)$$

Problem 398: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 474 leaves, 24 steps):

$$\frac{a^4\,e\,x}{b^5}+\frac{a^2\,e\,x}{2\,b^3}+\frac{a^4\,f\,x^2}{2\,b^5}+\frac{a^2\,f\,x^2}{4\,b^3}-\frac{(e+f\,x)^2}{16\,b\,f}-\frac{a^3\,(e+f\,x)\,\text{Cosh}[c+d\,x]}{b^4\,d}-\frac{a^2\,f\,\text{Cosh}[c+d\,x]^2}{4\,b^3\,d^2}-$$
$$\frac{a\,(e+f\,x)\,\text{Cosh}[c+d\,x]^3}{3\,b^2\,d}-\frac{f\,\text{Cosh}[4\,c+4\,d\,x]}{128\,b\,d^2}-\frac{a^3\,\sqrt{a^2+b^2}\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d}+$$
$$\frac{a^3\,\sqrt{a^2+b^2}\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d}-\frac{a^3\,\sqrt{a^2+b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^5\,d^2}+$$
$$\frac{a^3\,\sqrt{a^2+b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^5\,d^2}+\frac{a^3\,f\,\text{Sinh}[c+d\,x]}{b^4\,d^2}+\frac{a\,f\,\text{Sinh}[c+d\,x]}{3\,b^2\,d^2}+$$
$$\frac{a^2\,(e+f\,x)\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{2\,b^3\,d}+\frac{a\,f\,\text{Sinh}[c+d\,x]^3}{9\,b^2\,d^2}+\frac{(e+f\,x)\,\text{Sinh}[4\,c+4\,d\,x]}{32\,b\,d}$$

Result (type 4, 2162 leaves):

$$-\frac{e\left(\frac{c}{d}+x-\frac{2\,a\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}\,d}\right)}{8\,b}-$$
$$\frac{1}{16\,b}\,f\left(x^2+\frac{1}{d^2}\,2\,a\left(\frac{i\,\pi\,\text{ArcTanh}\left[\frac{-b+a\,\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2+b^2}}\right]}{\sqrt{a^2+b^2}}+\frac{1}{\sqrt{-a^2-b^2}}\left(2\left(-i\,c+\text{ArcCos}\left[-\frac{i\,a}{b}\right]\right)\right.\right.\right.$$

$$\text{ArcTanh}\left[\frac{(a+\mathrm{i}\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]+(-2\,\mathrm{i}\,c+\pi-2\,\mathrm{i}\,d\,x)$$

$$\text{ArcTanh}\left[\frac{(a-\mathrm{i}\,b)\,\text{Tan}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{\mathrm{i}\,a}{b}\right]+2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(a+\mathrm{i}\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

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

$$\left(\text{ArcCos}\left[-\frac{\mathrm{i}\,a}{b}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(a+\mathrm{i}\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)$$

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

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

$$\left(\text{ArcCos}\left[-\frac{\mathrm{i}\,a}{b}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(a+\mathrm{i}\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]-2\,\mathrm{i}\,\text{ArcTanh}\left[\right.\right.$$

$$\left.\left.\frac{(a-\mathrm{i}\,b)\,\text{Tan}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]\right)\,\text{Log}\left[\frac{\sqrt{-a^2-b^2}\,e^{\frac{1}{4}\,(-2\,c-\mathrm{i}\,\pi-2\,d\,x)}}{\sqrt{2}\,\sqrt{-\mathrm{i}\,b}\,\sqrt{a+b\,\text{Sinh}[c+d\,x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{\mathrm{i}\,a}{b}\right]+2\,\mathrm{i}\,\left(\text{ArcTanh}\left[\frac{(a+\mathrm{i}\,b)\,\text{Cot}\left[\frac{1}{4}\,(2\,\mathrm{i}\,c+\pi+2\,\mathrm{i}\,d\,x)\right]}{\sqrt{-a^2-b^2}}\right]+\right.\right.$$

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

$$\text{Log}\left[\frac{\sqrt{-a^2-b^2}\,e^{\frac{1}{4}\,(2\,c+\mathrm{i}\,\pi+2\,d\,x)}}{\sqrt{2}\,\sqrt{-\mathrm{i}\,b}\,\sqrt{a+b\,\text{Sinh}[c+d\,x]}}\right]+\mathrm{i}\,\left(\text{PolyLog}\left[2,\right.\right.$$

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

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

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

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

$$\frac{1}{16\,b^3\,d}e\left((4\,a^2+b^2)\,(c+d\,x)-\frac{2\,a\,(4\,a^2+3\,b^2)\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}-\right.$$

$$4\,a\,b\,\text{Cosh}[c+d\,x]+$$

$$\left.b^2\,\text{Sinh}[2\,(c+d\,x)]\right)-\frac{1}{32\,b^3\,d^2}f\left((4\,a^2+b^2)\right.$$

$$(-c+d\,x)\,(c+d\,x)-8\,a\,b\,d\,x\,\text{Cosh}[c+d\,x]-$$

$$b^2\,\text{Cosh}[2\,(c+d\,x)]-4\,a\,(4\,a^2+3\,b^2)$$

$$\left(-\frac{c\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\,\sqrt{a^2+b^2}}\right.$$

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

$$\left.\left.\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+$$

$$\left.8\,a\,b\,\text{Sinh}[c+d\,x]+2\,b^2\,d\,x\,\text{Sinh}[2\,(c+d\,x)]\right)+\frac{1}{96\,b^5\,d}e$$

$$\left(6\,(16\,a^4+12\,a^2\,b^2+b^4)\right.$$

$$(c+d\,x)-$$

$$\frac{12\,a\,\left(16\,a^4+20\,a^2\,b^2+5\,b^4\right)\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}-$$

$$48\,a\,b\,\left(2\,a^2+b^2\right)\,\text{Cosh}[c+d\,x]-8\,a\,b^3\,\text{Cosh}\left[3\,(c+d\,x)\right]+6\,b^2\,\left(4\,a^2+b^2\right)\,\text{Sinh}\left[2\,(c+d\,x)\right]+3\,b^4\,\text{Sinh}\left[4\,(c+d\,x)\right]\Bigg)+$$

$$\frac{1}{1152\,b^5\,d^2}\,f\,\Bigg(-576\,a^4\,c^2-432\,a^2\,b^2\,c^2-36\,b^4\,c^2+$$

$$576\,a^4\,d^2\,x^2+432\,a^2\,b^2\,d^2\,x^2+36\,b^4\,d^2\,x^2-576\,a\,b\,\left(2\,a^2+b^2\right)\,d\,x\,\text{Cosh}[c+d\,x]-$$

$$36\,\left(4\,a^2\,b^2+b^4\right)\,\text{Cosh}\left[2\,(c+d\,x)\right]-96\,a\,b^3\,d\,x\,\text{Cosh}\left[3\,(c+d\,x)\right]-9\,b^4\,\text{Cosh}\left[4\,(c+d\,x)\right]-$$

$$144\,a\,\left(16\,a^4+20\,a^2\,b^2+5\,b^4\right)\,\left(-\frac{c\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{1}{2\,\sqrt{a^2+b^2}}\right.$$

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

$$\left.\left.\text{PolyLog}\left[2,\,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)+$$

$$1152\,a^3\,b\,\text{Sinh}[c+d\,x]+576\,a\,b^3\,\text{Sinh}[c+d\,x]+288\,a^2\,b^2\,d\,x\,\text{Sinh}\left[2\,(c+d\,x)\right]+$$

$$72\,b^4\,d\,x\,\text{Sinh}\left[2\,(c+d\,x)\right]+$$

$$32\,a\,b^3\,\text{Sinh}\left[3\,(c+d\,x)\right]+$$

$$36\,b^4\,d\,x\,\text{Sinh}\left[4\,\left(c+d\,x\right)\right]\Bigg)$$

Problem 400: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]^3}{\left(e+f\,x\right)\,\left(a+b\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]^3}{\left(e+f\,x\right)\,\left(a+b\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 401: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(e+f\,x\right)^3\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1443 leaves, 55 steps):

$$-\frac{3\,a^3\,f^3\,x}{8\,b^4\,d^3}+\frac{45\,a\,f^3\,x}{256\,b^2\,d^3}-\frac{a^3\,\left(e+f\,x\right)^3}{4\,b^4\,d}+\frac{3\,a\,\left(e+f\,x\right)^3}{32\,b^2\,d}+\frac{a^3\,\left(a^2+b^2\right)\,\left(e+f\,x\right)^4}{4\,b^6\,f}-$$
$$\frac{6\,a^4\,f^3\,\text{Cosh}[c+d\,x]}{b^5\,d^4}-\frac{40\,a^2\,f^3\,\text{Cosh}[c+d\,x]}{9\,b^3\,d^4}+\frac{3\,f^3\,\text{Cosh}[c+d\,x]}{4\,b\,d^4}-\frac{3\,a^4\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]}{b^5\,d^2}-$$
$$\frac{2\,a^2\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]}{b^3\,d^2}+\frac{3\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]}{8\,b\,d^2}-\frac{9\,a\,f^2\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]^2}{32\,b^2\,d^3}-$$
$$\frac{2\,a^2\,f^3\,\text{Cosh}[c+d\,x]^3}{27\,b^3\,d^4}-\frac{a^2\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]^3}{3\,b^3\,d^2}-\frac{3\,a\,f^2\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]^4}{32\,b^2\,d^3}-$$
$$\frac{a\,\left(e+f\,x\right)^3\,\text{Cosh}[c+d\,x]^4}{4\,b^2\,d}-\frac{f^3\,\text{Cosh}[3\,c+3\,d\,x]}{216\,b\,d^4}-\frac{f\,\left(e+f\,x\right)^2\,\text{Cosh}[3\,c+3\,d\,x]}{48\,b\,d^2}-$$
$$\frac{3\,f^3\,\text{Cosh}[5\,c+5\,d\,x]}{5000\,b\,d^4}-\frac{3\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[5\,c+5\,d\,x]}{400\,b\,d^2}-\frac{a^3\,\left(a^2+b^2\right)\,\left(e+f\,x\right)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^6\,d}-$$
$$\frac{a^3\,\left(a^2+b^2\right)\,\left(e+f\,x\right)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^6\,d}-\frac{3\,a^3\,\left(a^2+b^2\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^6\,d^2}-$$
$$\frac{3\,a^3\,\left(a^2+b^2\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^6\,d^2}+$$

$$\frac{6\,a^3\,\left(a^2+b^2\right)\,f^2\,\left(e+f\,x\right)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^6\,d^3}+$$
$$\frac{6\,a^3\,\left(a^2+b^2\right)\,f^2\,\left(e+f\,x\right)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^6\,d^3}-\frac{6\,a^3\,\left(a^2+b^2\right)\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^6\,d^4}-$$
$$\frac{6\,a^3\,\left(a^2+b^2\right)\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^6\,d^4}+\frac{6\,a^4\,f^2\,\left(e+f\,x\right)\,\text{Sinh}[c+d\,x]}{b^5\,d^3}+$$
$$\frac{40\,a^2\,f^2\,\left(e+f\,x\right)\,\text{Sinh}[c+d\,x]}{9\,b^3\,d^3}-\frac{3\,f^2\,\left(e+f\,x\right)\,\text{Sinh}[c+d\,x]}{4\,b\,d^3}+$$
$$\frac{a^4\,\left(e+f\,x\right)^3\,\text{Sinh}[c+d\,x]}{b^5\,d}+\frac{2\,a^2\,\left(e+f\,x\right)^3\,\text{Sinh}[c+d\,x]}{3\,b^3\,d}-\frac{\left(e+f\,x\right)^3\,\text{Sinh}[c+d\,x]}{8\,b\,d}+$$
$$\frac{3\,a^3\,f^3\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{8\,b^4\,d^4}+\frac{45\,a\,f^3\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{256\,b^2\,d^4}+$$
$$\frac{3\,a^3\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{4\,b^4\,d^2}+\frac{9\,a\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]\,\text{Sinh}[c+d\,x]}{32\,b^2\,d^2}+$$
$$\frac{2\,a^2\,f^2\,\left(e+f\,x\right)\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]}{9\,b^3\,d^3}+\frac{a^2\,\left(e+f\,x\right)^3\,\text{Cosh}[c+d\,x]^2\,\text{Sinh}[c+d\,x]}{3\,b^3\,d}+$$
$$\frac{3\,a\,f^3\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{128\,b^2\,d^4}+\frac{3\,a\,f\,\left(e+f\,x\right)^2\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]}{16\,b^2\,d^2}-$$
$$\frac{3\,a^3\,f^2\,\left(e+f\,x\right)\,\text{Sinh}[c+d\,x]^2}{4\,b^4\,d^3}-\frac{a^3\,\left(e+f\,x\right)^3\,\text{Sinh}[c+d\,x]^2}{2\,b^4\,d}+\frac{f^2\,\left(e+f\,x\right)\,\text{Sinh}[3\,c+3\,d\,x]}{72\,b\,d^3}+$$
$$\frac{\left(e+f\,x\right)^3\,\text{Sinh}[3\,c+3\,d\,x]}{48\,b\,d}+\frac{3\,f^2\,\left(e+f\,x\right)\,\text{Sinh}[5\,c+5\,d\,x]}{1000\,b\,d^3}+\frac{\left(e+f\,x\right)^3\,\text{Sinh}[5\,c+5\,d\,x]}{80\,b\,d}$$

Result (type 4, 5008 leaves) :

$$\frac{1}{8}\left(\frac{1}{b^6\,d^4\,\left(-1+e^{2\,c}\right)}4\,a^3\,\left(a^2+b^2\right)\,\left(4\,d^4\,e^3\,e^{2\,c}\,x+6\,d^4\,e^2\,e^{2\,c}\,f\,x^2+4\,d^4\,e\,e^{2\,c}\,f^2\,x^3+d^4\,e^{2\,c}\,f^3\,x^4+\right.\right.$$
$$2\,d^3\,e^3\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]-2\,d^3\,e^3\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$2\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$2\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2$$
$$\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$12\,d\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,f^3\,x$$
$$\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,f^3\,x$$
$$\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)-$$
$$\frac{8\,a^3\,\left(a^2+b^2\right)\,e^3\,x\,\left(1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}{b^6\,\left(-1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}-$$
$$\frac{12\,a^3\,\left(a^2+b^2\right)\,e^2\,f\,x^2\,\left(1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}{b^6\,\left(-1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}-$$
$$\frac{8\,a^3\,\left(a^2+b^2\right)\,e\,f^2\,x^3\,\left(1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}{b^6\,\left(-1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}-$$
$$\frac{2\,a^3\,\left(a^2+b^2\right)\,f^3\,x^4\,\left(1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}{b^6\,\left(-1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)}+$$
$$\Bigg(\left(-8\,a^4-6\,a^2\,b^2+b^4\right)\,\left(d^3\,e^3+3\,d^2\,e^2\,f+6\,d\,e\,f^2+6\,f^3\right)\,\left(\frac{\text{Cosh}[c]}{2\,b^5\,d^4}-\frac{\text{Sinh}[c]}{2\,b^5\,d^4}\right)+$$
$$\left(-8\,a^4\,d^2\,e^2\,f-6\,a^2\,b^2\,d^2\,e^2\,f+b^4\,d^2\,e^2\,f-16\,a^4\,d\,e\,f^2-12\,a^2\,b^2\,d\,e\,f^2+\right.$$
$$\left.2\,b^4\,d\,e\,f^2-16\,a^4\,f^3-12\,a^2\,b^2\,f^3+2\,b^4\,f^3\right)\,\left(\frac{3\,x\,\text{Cosh}[c]}{2\,b^5\,d^3}-\frac{3\,x\,\text{Sinh}[c]}{2\,b^5\,d^3}\right)+$$

$$\left(-8 a^4 d e f^2-6 a^2 b^2 d e f^2+b^4 d e f^2-8 a^4 f^3-6 a^2 b^2 f^3+b^4 f^3\right)$$
$$\left(\frac{3 x^2 \text{Cosh}[c]}{2 b^5 d^2}-\frac{3 x^2 \text{Sinh}[c]}{2 b^5 d^2}\right)+$$
$$\left(-8 a^4-6 a^2 b^2+b^4\right)\left(\frac{f^3 x^3 \text{Cosh}[c]}{2 b^5 d}-\frac{f^3 x^3 \text{Sinh}[c]}{2 b^5 d}\right)\Bigg)\left(\text{Cosh}[d x]-\text{Sinh}[d x]\right)+$$
$$\Bigg(\left(-8 a^4-6 a^2 b^2+b^4\right)\left(d^3 e^3-3 d^2 e^2 f+6 d e f^2-6 f^3\right)\left(-\frac{\text{Cosh}[c]}{2 b^5 d^4}-\frac{\text{Sinh}[c]}{2 b^5 d^4}\right)-\frac{1}{2 b^5 d^2}$$
$$3 x^2\left(-8 a^4 d e f^2 \text{Cosh}[c]-6 a^2 b^2 d e f^2 \text{Cosh}[c]+b^4 d e f^2 \text{Cosh}[c]+8 a^4 f^3 \text{Cosh}[c]+\right.$$
$$6 a^2 b^2 f^3 \text{Cosh}[c]-b^4 f^3 \text{Cosh}[c]-8 a^4 d e f^2 \text{Sinh}[c]-6 a^2 b^2 d e f^2 \text{Sinh}[c]+$$
$$\left.b^4 d e f^2 \text{Sinh}[c]+8 a^4 f^3 \text{Sinh}[c]+6 a^2 b^2 f^3 \text{Sinh}[c]-b^4 f^3 \text{Sinh}[c]\right)-$$
$$\frac{1}{2 b^5 d^3} 3 x\left(-8 a^4 d^2 e^2 f \text{Cosh}[c]-6 a^2 b^2 d^2 e^2 f \text{Cosh}[c]+b^4 d^2 e^2 f \text{Cosh}[c]+\right.$$
$$16 a^4 d e f^2 \text{Cosh}[c]+12 a^2 b^2 d e f^2 \text{Cosh}[c]-2 b^4 d e f^2 \text{Cosh}[c]-16 a^4 f^3 \text{Cosh}[c]-$$
$$12 a^2 b^2 f^3 \text{Cosh}[c]+2 b^4 f^3 \text{Cosh}[c]-8 a^4 d^2 e^2 f \text{Sinh}[c]-6 a^2 b^2 d^2 e^2 f \text{Sinh}[c]+$$
$$b^4 d^2 e^2 f \text{Sinh}[c]+16 a^4 d e f^2 \text{Sinh}[c]+12 a^2 b^2 d e f^2 \text{Sinh}[c]-$$
$$\left.2 b^4 d e f^2 \text{Sinh}[c]-16 a^4 f^3 \text{Sinh}[c]-12 a^2 b^2 f^3 \text{Sinh}[c]+2 b^4 f^3 \text{Sinh}[c]\right)+$$
$$\left(-8 a^4-6 a^2 b^2+b^4\right)\left(-\frac{f^3 x^3 \text{Cosh}[c]}{2 b^5 d}-\frac{f^3 x^3 \text{Sinh}[c]}{2 b^5 d}\right)\Bigg)\left(\text{Cosh}[d x]+\text{Sinh}[d x]\right)+$$
$$\Bigg(\left(2 a^2+b^2\right)\left(4 d^3 e^3+6 d^2 e^2 f+6 d e f^2+3 f^3\right)\left(-\frac{a \text{Cosh}[2 c]}{8 b^4 d^4}+\frac{a \text{Sinh}[2 c]}{8 b^4 d^4}\right)+$$
$$\left(4 a^3 d^2 e^2 f+2 a b^2 d^2 e^2 f+4 a^3 d e f^2+2 a b^2 d e f^2+2 a^3 f^3+a b^2 f^3\right)$$
$$\left(-\frac{3 x \text{Cosh}[2 c]}{4 b^4 d^3}+\frac{3 x \text{Sinh}[2 c]}{4 b^4 d^3}\right)+$$
$$\left(4 a^3 d e f^2+2 a b^2 d e f^2+2 a^3 f^3+a b^2 f^3\right)\left(-\frac{3 x^2 \text{Cosh}[2 c]}{4 b^4 d^2}+\frac{3 x^2 \text{Sinh}[2 c]}{4 b^4 d^2}\right)+$$
$$\left(2 a^2+b^2\right)\left(-\frac{a f^3 x^3 \text{Cosh}[2 c]}{2 b^4 d}+\frac{a f^3 x^3 \text{Sinh}[2 c]}{2 b^4 d}\right)\Bigg)\left(\text{Cosh}[2 d x]-\text{Sinh}[2 d x]\right)+$$
$$\Bigg(\left(2 a^2+b^2\right)\left(4 d^3 e^3-6 d^2 e^2 f+6 d e f^2-3 f^3\right)\left(-\frac{a \text{Cosh}[2 c]}{8 b^4 d^4}-\frac{a \text{Sinh}[2 c]}{8 b^4 d^4}\right)-\frac{1}{4 b^4 d^2}$$
$$3 x^2\left(4 a^3 d e f^2 \text{Cosh}[2 c]+2 a b^2 d e f^2 \text{Cosh}[2 c]-2 a^3 f^3 \text{Cosh}[2 c]-a b^2 f^3 \text{Cosh}[2 c]+4 a^3 d\right.$$
$$\left.e f^2 \text{Sinh}[2 c]+2 a b^2 d e f^2 \text{Sinh}[2 c]-2 a^3 f^3 \text{Sinh}[2 c]-a b^2 f^3 \text{Sinh}[2 c]\right)-\frac{1}{4 b^4 d^3} 3 x$$
$$\left(4 a^3 d^2 e^2 f \text{Cosh}[2 c]+2 a b^2 d^2 e^2 f \text{Cosh}[2 c]-4 a^3 d e f^2 \text{Cosh}[2 c]-2 a b^2 d e f^2 \text{Cosh}[2 c]+\right.$$
$$2 a^3 f^3 \text{Cosh}[2 c]+a b^2 f^3 \text{Cosh}[2 c]+4 a^3 d^2 e^2 f \text{Sinh}[2 c]+2 a b^2 d^2 e^2 f \text{Sinh}[2 c]-$$
$$\left.4 a^3 d e f^2 \text{Sinh}[2 c]-2 a b^2 d e f^2 \text{Sinh}[2 c]+2 a^3 f^3 \text{Sinh}[2 c]+a b^2 f^3 \text{Sinh}[2 c]\right)+$$
$$\left(2 a^2+b^2\right)\left(-\frac{a f^3 x^3 \text{Cosh}[2 c]}{2 b^4 d}-\frac{a f^3 x^3 \text{Sinh}[2 c]}{2 b^4 d}\right)\Bigg)\left(\text{Cosh}[2 d x]+\text{Sinh}[2 d x]\right)+$$
$$\Bigg(\left(4 a^2+b^2\right)\left(9 d^3 e^3+9 d^2 e^2 f+6 d e f^2+2 f^3\right)\left(-\frac{\text{Cosh}[3 c]}{108 b^3 d^4}+\frac{\text{Sinh}[3 c]}{108 b^3 d^4}\right)+$$
$$\left(36 a^2 d^2 e^2 f+9 b^2 d^2 e^2 f+24 a^2 d e f^2+6 b^2 d e f^2+8 a^2 f^3+2 b^2 f^3\right)$$
$$\left(-\frac{x \text{Cosh}[3 c]}{36 b^3 d^3}+\frac{x \text{Sinh}[3 c]}{36 b^3 d^3}\right)+$$
$$\left(12 a^2 d e f^2+3 b^2 d e f^2+4 a^2 f^3+b^2 f^3\right)\left(-\frac{x^2 \text{Cosh}[3 c]}{12 b^3 d^2}+\frac{x^2 \text{Sinh}[3 c]}{12 b^3 d^2}\right)+$$

$$\left(4 a^2+b^2\right)\left(-\frac{f^3 x^3 \operatorname{Cosh}[3 c]}{12 b^3 d}+\frac{f^3 x^3 \operatorname{Sinh}[3 c]}{12 b^3 d}\right)\bigg) (\operatorname{Cosh}[3 d x]-\operatorname{Sinh}[3 d x])+$$

$$\Bigg(\left(4 a^2+b^2\right)\left(9 d^3 e^3-9 d^2 e^2 f+6 d e f^2-2 f^3\right)\left(\frac{\operatorname{Cosh}[3 c]}{108 b^3 d^4}+\frac{\operatorname{Sinh}[3 c]}{108 b^3 d^4}\right)+\frac{1}{12 b^3 d^2}$$

$$x^2\left(12 a^2 d e f^2 \operatorname{Cosh}[3 c]+3 b^2 d e f^2 \operatorname{Cosh}[3 c]-4 a^2 f^3 \operatorname{Cosh}[3 c]-b^2 f^3 \operatorname{Cosh}[3 c]+\right.$$

$$\left.12 a^2 d e f^2 \operatorname{Sinh}[3 c]+3 b^2 d e f^2 \operatorname{Sinh}[3 c]-4 a^2 f^3 \operatorname{Sinh}[3 c]-b^2 f^3 \operatorname{Sinh}[3 c]\right)+\frac{1}{36 b^3 d^3}$$

$$x\left(36 a^2 d^2 e^2 f \operatorname{Cosh}[3 c]+9 b^2 d^2 e^2 f \operatorname{Cosh}[3 c]-24 a^2 d e f^2 \operatorname{Cosh}[3 c]-6 b^2 d e f^2 \operatorname{Cosh}[3 c]+\right.$$

$$8 a^2 f^3 \operatorname{Cosh}[3 c]+2 b^2 f^3 \operatorname{Cosh}[3 c]+36 a^2 d^2 e^2 f \operatorname{Sinh}[3 c]+9 b^2 d^2 e^2 f \operatorname{Sinh}[3 c]-$$

$$\left.24 a^2 d e f^2 \operatorname{Sinh}[3 c]-6 b^2 d e f^2 \operatorname{Sinh}[3 c]+8 a^2 f^3 \operatorname{Sinh}[3 c]+2 b^2 f^3 \operatorname{Sinh}[3 c]\right)+$$

$$\left(4 a^2+b^2\right)\left(\frac{f^3 x^3 \operatorname{Cosh}[3 c]}{12 b^3 d}+\frac{f^3 x^3 \operatorname{Sinh}[3 c]}{12 b^3 d}\right)\Bigg)(\operatorname{Cosh}[3 d x]+\operatorname{Sinh}[3 d x])+$$

$$\Bigg(-\frac{a f^3 x^3 \operatorname{Cosh}[4 c]}{8 b^2 d}+\frac{a f^3 x^3 \operatorname{Sinh}[4 c]}{8 b^2 d}+\left(32 d^3 e^3+24 d^2 e^2 f+12 d e f^2+3 f^3\right)$$

$$\left(-\frac{a \operatorname{Cosh}[4 c]}{256 b^2 d^4}+\frac{a \operatorname{Sinh}[4 c]}{256 b^2 d^4}\right)+\left(8 a d^2 e^2 f+4 a d e f^2+a f^3\right)$$

$$\left(-\frac{3 x \operatorname{Cosh}[4 c]}{64 b^2 d^3}+\frac{3 x \operatorname{Sinh}[4 c]}{64 b^2 d^3}\right)+\left(4 a d e f^2+a f^3\right)\left(-\frac{3 x^2 \operatorname{Cosh}[4 c]}{32 b^2 d^2}+\frac{3 x^2 \operatorname{Sinh}[4 c]}{32 b^2 d^2}\right)\Bigg)$$

$$(\operatorname{Cosh}[4 d x]-\operatorname{Sinh}[4 d x])+\Bigg(-\frac{a f^3 x^3 \operatorname{Cosh}[4 c]}{8 b^2 d}-\frac{a f^3 x^3 \operatorname{Sinh}[4 c]}{8 b^2 d}+$$

$$\left(32 d^3 e^3-24 d^2 e^2 f+12 d e f^2-3 f^3\right)\left(-\frac{a \operatorname{Cosh}[4 c]}{256 b^2 d^4}-\frac{a \operatorname{Sinh}[4 c]}{256 b^2 d^4}\right)-\frac{1}{32 b^2 d^2}$$

$$3 x^2\left(4 a d e f^2 \operatorname{Cosh}[4 c]-a f^3 \operatorname{Cosh}[4 c]+4 a d e f^2 \operatorname{Sinh}[4 c]-a f^3 \operatorname{Sinh}[4 c]\right)-\frac{1}{64 b^2 d^3}$$

$$3 x\left(8 a d^2 e^2 f \operatorname{Cosh}[4 c]-4 a d e f^2 \operatorname{Cosh}[4 c]+a f^3 \operatorname{Cosh}[4 c]+8 a d^2 e^2 f \operatorname{Sinh}[4 c]-\right.$$

$$\left.4 a d e f^2 \operatorname{Sinh}[4 c]+a f^3 \operatorname{Sinh}[4 c]\right)\Bigg)(\operatorname{Cosh}[4 d x]+\operatorname{Sinh}[4 d x])+$$

$$\Bigg(-\frac{f^3 x^3 \operatorname{Cosh}[5 c]}{20 b d}+\frac{f^3 x^3 \operatorname{Sinh}[5 c]}{20 b d}+\left(125 d^3 e^3+75 d^2 e^2 f+30 d e f^2+6 f^3\right)$$

$$\left(-\frac{\operatorname{Cosh}[5 c]}{2500 b d^4}+\frac{\operatorname{Sinh}[5 c]}{2500 b d^4}\right)+\left(25 d^2 e^2 f+10 d e f^2+2 f^3\right)\left(-\frac{3 x \operatorname{Cosh}[5 c]}{500 b d^3}+\frac{3 x \operatorname{Sinh}[5 c]}{500 b d^3}\right)+$$

$$\left(5 d e f^2+f^3\right)\left(-\frac{3 x^2 \operatorname{Cosh}[5 c]}{100 b d^2}+\frac{3 x^2 \operatorname{Sinh}[5 c]}{100 b d^2}\right)\Bigg)$$

$$(\operatorname{Cosh}[5 d x]-\operatorname{Sinh}[5 d x])+\Bigg(\frac{f^3 x^3 \operatorname{Cosh}[5 c]}{20 b d}+\frac{f^3 x^3 \operatorname{Sinh}[5 c]}{20 b d}+$$

$$\left(125 d^3 e^3-75 d^2 e^2 f+30 d e f^2-6 f^3\right)\left(\frac{\operatorname{Cosh}[5 c]}{2500 b d^4}+\frac{\operatorname{Sinh}[5 c]}{2500 b d^4}\right)+\frac{1}{100 b d^2}$$

$$3 x^2\left(5 d e f^2 \operatorname{Cosh}[5 c]-f^3 \operatorname{Cosh}[5 c]+5 d e f^2 \operatorname{Sinh}[5 c]-f^3 \operatorname{Sinh}[5 c]\right)+\frac{1}{500 b d^3}$$

$$3 x\left(25 d^2 e^2 f \operatorname{Cosh}[5 c]-10 d e f^2 \operatorname{Cosh}[5 c]+2 f^3 \operatorname{Cosh}[5 c]+25 d^2 e^2 f \operatorname{Sinh}[5 c]-\right.$$

$$\left.10 d e f^2 \operatorname{Sinh}[5 c]+2 f^3 \operatorname{Sinh}[5 c]\right)\Bigg)(\operatorname{Cosh}[5 d x]+\operatorname{Sinh}[5 d x])\Bigg)$$

Problem 402: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Cosh}[c+d x]^3 \operatorname{Sinh}[c+d x]^3}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 1049 leaves, 40 steps):

$$-\frac{a^3 e f x}{2 b^4 d}+\frac{3 a e f x}{16 b^2 d}-\frac{a^3 f^2 x^2}{4 b^4 d}+\frac{3 a f^2 x^2}{32 b^2 d}+\frac{a^3 \left(a^2+b^2\right) (e+f x)^3}{3 b^6 f}-\frac{2 a^4 f (e+f x) \operatorname{Cosh}[c+d x]}{b^5 d^2}-\frac{4 a^2 f (e+f x) \operatorname{Cosh}[c+d x]}{3 b^3 d^2}+\frac{f (e+f x) \operatorname{Cosh}[c+d x]}{4 b d^2}-\frac{3 a f^2 \operatorname{Cosh}[c+d x]^2}{32 b^2 d^3}-\frac{2 a^2 f (e+f x) \operatorname{Cosh}[c+d x]^3}{9 b^3 d^2}-\frac{a f^2 \operatorname{Cosh}[c+d x]^4}{32 b^2 d^3}-\frac{a (e+f x)^2 \operatorname{Cosh}[c+d x]^4}{4 b^2 d}-\frac{f (e+f x) \operatorname{Cosh}[3 c+3 d x]}{72 b d^2}-\frac{f (e+f x) \operatorname{Cosh}[5 c+5 d x]}{200 b d^2}-\frac{a^3 \left(a^2+b^2\right) (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^6 d}-\frac{a^3 \left(a^2+b^2\right) (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^6 d}-\frac{2 a^3 \left(a^2+b^2\right) f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^6 d^2}-\frac{2 a^3 \left(a^2+b^2\right) f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^6 d^2}+\frac{2 a^3 \left(a^2+b^2\right) f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^6 d^3}+\frac{2 a^3 \left(a^2+b^2\right) f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^6 d^3}+\frac{2 a^4 f^2 \operatorname{Sinh}[c+d x]}{b^5 d^3}+\frac{14 a^2 f^2 \operatorname{Sinh}[c+d x]}{9 b^3 d^3}-\frac{f^2 \operatorname{Sinh}[c+d x]}{4 b d^3}+\frac{a^4 (e+f x)^2 \operatorname{Sinh}[c+d x]}{b^5 d}+\frac{2 a^2 (e+f x)^2 \operatorname{Sinh}[c+d x]}{3 b^3 d}-\frac{(e+f x)^2 \operatorname{Sinh}[c+d x]}{8 b d}+\frac{a^3 f (e+f x) \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{2 b^4 d^2}+\frac{3 a f (e+f x) \operatorname{Cosh}[c+d x] \operatorname{Sinh}[c+d x]}{16 b^2 d^2}+\frac{a^2 (e+f x)^2 \operatorname{Cosh}[c+d x]^2 \operatorname{Sinh}[c+d x]}{3 b^3 d}+\frac{a f (e+f x) \operatorname{Cosh}[c+d x]^3 \operatorname{Sinh}[c+d x]}{8 b^2 d^2}-\frac{a^3 f^2 \operatorname{Sinh}[c+d x]^2}{4 b^4 d^3}-\frac{a^3 (e+f x)^2 \operatorname{Sinh}[c+d x]^2}{2 b^4 d}+\frac{2 a^2 f^2 \operatorname{Sinh}[c+d x]^3}{27 b^3 d^3}+\frac{f^2 \operatorname{Sinh}[3 c+3 d x]}{216 b d^3}+\frac{(e+f x)^2 \operatorname{Sinh}[3 c+3 d x]}{48 b d}+\frac{f^2 \operatorname{Sinh}[5 c+5 d x]}{1000 b d^3}+\frac{(e+f x)^2 \operatorname{Sinh}[5 c+5 d x]}{80 b d}$$

Result (type 4, 2913 leaves):

$$\frac{1}{8} \left(\frac{1}{3 b^6 d^3 \left(-1+e^{2 c}\right)} 8 a^3 \left(a^2+b^2\right) \left(6 d^3 e^2 e^{2 c} x+6 d^3 e e^{2 c} f x^2+2 d^3 e^{2 c} f^2 x^3+3 d^2 e^2 \operatorname{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]-\right.\right.$$

$$3 d^2 e^2 e^{2 c} \text{Log}\left[2 a e^{c+d x} + b \left(-1 + e^{2 (c+d x)}\right)\right] + 6 d^2 e f x \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

$$6 d^2 e e^{2 c} f x \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] + 3 d^2 f^2 x^2 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

$$3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] + 6 d^2 e f x \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

$$6 d^2 e e^{2 c} f x \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] + 3 d^2 f^2 x^2 \text{Log}\left[1 + \frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

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

$$6 d \left(-1 + e^{2 c}\right) f (e + f x) \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

$$6 d \left(-1 + e^{2 c}\right) f (e + f x) \text{PolyLog}\left[2, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

$$6 f^2 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] + 6 e^{2 c} f^2 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] -$$

$$6 f^2 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right] + 6 e^{2 c} f^2 \text{PolyLog}\left[3, -\frac{b e^{2 c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\Bigg) -$$

$$\frac{8 a^3 \left(a^2+b^2\right) e^2 x \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)}{b^6 \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)} -$$

$$\frac{8 a^3 \left(a^2+b^2\right) e f x^2 \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)}{b^6 \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)} -$$

$$\frac{8 a^3 \left(a^2+b^2\right) f^2 x^3 \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)}{3 b^6 \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)} +$$

$$\Bigg(\left(-8 a^4 - 6 a^2 b^2 + b^4\right) \left(d^2 e^2 + 2 d e f + 2 f^2\right) \left(\frac{\text{Cosh}[c]}{2 b^5 d^3} - \frac{\text{Sinh}[c]}{2 b^5 d^3}\right) +$$

$$\left(8 a^4 d e f + 6 a^2 b^2 d e f - b^4 d e f + 8 a^4 f^2 + 6 a^2 b^2 f^2 - b^4 f^2\right) \left(-\frac{x \text{Cosh}[c]}{b^5 d^2} + \frac{x \text{Sinh}[c]}{b^5 d^2}\right) +$$

$$\left(-8 a^4 - 6 a^2 b^2 + b^4\right) \left(\frac{f^2 x^2 \text{Cosh}[c]}{2 b^5 d} - \frac{f^2 x^2 \text{Sinh}[c]}{2 b^5 d}\right)\Bigg) \left(\text{Cosh}[d x] - \text{Sinh}[d x]\right) +$$

$$\Bigg(\left(-8 a^4 - 6 a^2 b^2 + b^4\right) \left(d^2 e^2 - 2 d e f + 2 f^2\right) \left(-\frac{\text{Cosh}[c]}{2 b^5 d^3} - \frac{\text{Sinh}[c]}{2 b^5 d^3}\right) + \frac{1}{b^5 d^2}$$

$$x \left(8 a^4 d e f \text{Cosh}[c] + 6 a^2 b^2 d e f \text{Cosh}[c] - b^4 d e f \text{Cosh}[c] - 8 a^4 f^2 \text{Cosh}[c] -\right.$$
$$6 a^2 b^2 f^2 \text{Cosh}[c] + b^4 f^2 \text{Cosh}[c] + 8 a^4 d e f \text{Sinh}[c] + 6 a^2 b^2 d e f \text{Sinh}[c] -$$
$$\left. b^4 d e f \text{Sinh}[c] - 8 a^4 f^2 \text{Sinh}[c] - 6 a^2 b^2 f^2 \text{Sinh}[c] + b^4 f^2 \text{Sinh}[c]\right) +$$

$$\left(-8 a^4 - 6 a^2 b^2 + b^4\right) \left(-\frac{f^2 x^2 \text{Cosh}[c]}{2 b^5 d} - \frac{f^2 x^2 \text{Sinh}[c]}{2 b^5 d}\right)\Bigg) \left(\text{Cosh}[d x] + \text{Sinh}[d x]\right) +$$

$$\left(\left(2 a^2+b^2\right)\left(2 d^2 e^2+2 d e f+f^2\right)\left(-\frac{a \operatorname{Cosh}[2 c]}{4 b^4 d^3}+\frac{a \operatorname{Sinh}[2 c]}{4 b^4 d^3}\right)+\right.$$
$$\left(4 a^3 d e f+2 a b^2 d e f+2 a^3 f^2+a b^2 f^2\right)\left(-\frac{x \operatorname{Cosh}[2 c]}{2 b^4 d^2}+\frac{x \operatorname{Sinh}[2 c]}{2 b^4 d^2}\right)+$$
$$\left.\left(2 a^2+b^2\right)\left(-\frac{a f^2 x^2 \operatorname{Cosh}[2 c]}{2 b^4 d}+\frac{a f^2 x^2 \operatorname{Sinh}[2 c]}{2 b^4 d}\right)\right)(\operatorname{Cosh}[2 d x]-\operatorname{Sinh}[2 d x])+$$
$$\left(\left(2 a^2+b^2\right)\left(2 d^2 e^2-2 d e f+f^2\right)\left(-\frac{a \operatorname{Cosh}[2 c]}{4 b^4 d^3}-\frac{a \operatorname{Sinh}[2 c]}{4 b^4 d^3}\right)+\frac{1}{2 b^4 d^2}\right.$$
$$x\left(-4 a^3 d e f \operatorname{Cosh}[2 c]-2 a b^2 d e f \operatorname{Cosh}[2 c]+2 a^3 f^2 \operatorname{Cosh}[2 c]+a b^2 f^2 \operatorname{Cosh}[2 c]-\right.$$
$$\left.4 a^3 d e f \operatorname{Sinh}[2 c]-2 a b^2 d e f \operatorname{Sinh}[2 c]+2 a^3 f^2 \operatorname{Sinh}[2 c]+a b^2 f^2 \operatorname{Sinh}[2 c]\right)+$$
$$\left.\left(2 a^2+b^2\right)\left(-\frac{a f^2 x^2 \operatorname{Cosh}[2 c]}{2 b^4 d}-\frac{a f^2 x^2 \operatorname{Sinh}[2 c]}{2 b^4 d}\right)\right)(\operatorname{Cosh}[2 d x]+\operatorname{Sinh}[2 d x])+$$
$$\left(\left(4 a^2+b^2\right)\left(9 d^2 e^2+6 d e f+2 f^2\right)\left(-\frac{\operatorname{Cosh}[3 c]}{108 b^3 d^3}+\frac{\operatorname{Sinh}[3 c]}{108 b^3 d^3}\right)+\right.$$
$$\left(12 a^2 d e f+3 b^2 d e f+4 a^2 f^2+b^2 f^2\right)\left(-\frac{x \operatorname{Cosh}[3 c]}{18 b^3 d^2}+\frac{x \operatorname{Sinh}[3 c]}{18 b^3 d^2}\right)+$$
$$\left.\left(4 a^2+b^2\right)\left(-\frac{f^2 x^2 \operatorname{Cosh}[3 c]}{12 b^3 d}+\frac{f^2 x^2 \operatorname{Sinh}[3 c]}{12 b^3 d}\right)\right)(\operatorname{Cosh}[3 d x]-\operatorname{Sinh}[3 d x])+$$
$$\left(\left(4 a^2+b^2\right)\left(9 d^2 e^2-6 d e f+2 f^2\right)\left(\frac{\operatorname{Cosh}[3 c]}{108 b^3 d^3}+\frac{\operatorname{Sinh}[3 c]}{108 b^3 d^3}\right)+\frac{1}{18 b^3 d^2}\right.$$
$$x\left(12 a^2 d e f \operatorname{Cosh}[3 c]+3 b^2 d e f \operatorname{Cosh}[3 c]-4 a^2 f^2 \operatorname{Cosh}[3 c]-b^2 f^2 \operatorname{Cosh}[3 c]+\right.$$
$$\left.12 a^2 d e f \operatorname{Sinh}[3 c]+3 b^2 d e f \operatorname{Sinh}[3 c]-4 a^2 f^2 \operatorname{Sinh}[3 c]-b^2 f^2 \operatorname{Sinh}[3 c]\right)+$$
$$\left.\left(4 a^2+b^2\right)\left(\frac{f^2 x^2 \operatorname{Cosh}[3 c]}{12 b^3 d}+\frac{f^2 x^2 \operatorname{Sinh}[3 c]}{12 b^3 d}\right)\right)(\operatorname{Cosh}[3 d x]+\operatorname{Sinh}[3 d x])+$$
$$\left(-\frac{a f^2 x^2 \operatorname{Cosh}[4 c]}{8 b^2 d}+\frac{a f^2 x^2 \operatorname{Sinh}[4 c]}{8 b^2 d}+\left(8 d^2 e^2+4 d e f+f^2\right)\left(-\frac{a \operatorname{Cosh}[4 c]}{64 b^2 d^3}+\frac{a \operatorname{Sinh}[4 c]}{64 b^2 d^3}\right)+\right.$$
$$\left.\left(4 a d e f+a f^2\right)\left(-\frac{x \operatorname{Cosh}[4 c]}{16 b^2 d^2}+\frac{x \operatorname{Sinh}[4 c]}{16 b^2 d^2}\right)\right)(\operatorname{Cosh}[4 d x]-\operatorname{Sinh}[4 d x])+$$
$$\left(-\frac{a f^2 x^2 \operatorname{Cosh}[4 c]}{8 b^2 d}-\frac{a f^2 x^2 \operatorname{Sinh}[4 c]}{8 b^2 d}+\left(8 d^2 e^2-4 d e f+f^2\right)\left(-\frac{a \operatorname{Cosh}[4 c]}{64 b^2 d^3}-\frac{a \operatorname{Sinh}[4 c]}{64 b^2 d^3}\right)+\right.$$
$$\left.\frac{1}{16 b^2 d^2} x\left(-4 a d e f \operatorname{Cosh}[4 c]+a f^2 \operatorname{Cosh}[4 c]-4 a d e f \operatorname{Sinh}[4 c]+a f^2 \operatorname{Sinh}[4 c]\right)\right)$$
$$(\operatorname{Cosh}[4 d x]+\operatorname{Sinh}[4 d x])+$$
$$\left(-\frac{f^2 x^2 \operatorname{Cosh}[5 c]}{20 b d}+\frac{f^2 x^2 \operatorname{Sinh}[5 c]}{20 b d}+\left(25 d^2 e^2+10 d e f+2 f^2\right)\left(-\frac{\operatorname{Cosh}[5 c]}{500 b d^3}+\frac{\operatorname{Sinh}[5 c]}{500 b d^3}\right)+\right.$$
$$\left.\left(5 d e f+f^2\right)\left(-\frac{x \operatorname{Cosh}[5 c]}{50 b d^2}+\frac{x \operatorname{Sinh}[5 c]}{50 b d^2}\right)\right)(\operatorname{Cosh}[5 d x]-\operatorname{Sinh}[5 d x])+$$
$$\left(\frac{f^2 x^2 \operatorname{Cosh}[5 c]}{20 b d}+\frac{f^2 x^2 \operatorname{Sinh}[5 c]}{20 b d}+\left(25 d^2 e^2-10 d e f+2 f^2\right)\left(\frac{\operatorname{Cosh}[5 c]}{500 b d^3}+\frac{\operatorname{Sinh}[5 c]}{500 b d^3}\right)+\right.$$
$$\left.\frac{1}{50 b d^2} x\left(5 d e f \operatorname{Cosh}[5 c]-f^2 \operatorname{Cosh}[5 c]+5 d e f \operatorname{Sinh}[5 c]-f^2 \operatorname{Sinh}[5 c]\right)\right)$$

$$\left.\left(\text{Cosh}[5\,d\,x]+\text{Sinh}[5\,d\,x]\right)\right)$$

Problem 403: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)\,\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 641 leaves, 31 steps):

$$-\frac{a^3 f x}{4 b^4 d}+\frac{3 a f x}{32 b^2 d}+\frac{a^3 \left(a^2+b^2\right) (e+f x)^2}{2 b^6 f}-\frac{a^4 f \text{Cosh}[c+d x]}{b^5 d^2}-\frac{2 a^2 f \text{Cosh}[c+d x]}{3 b^3 d^2}+\frac{f \text{Cosh}[c+d x]}{8 b d^2}-\frac{a^2 f \text{Cosh}[c+d x]^3}{9 b^3 d^2}-\frac{a (e+f x) \text{Cosh}[c+d x]^4}{4 b^2 d}-\frac{f \text{Cosh}[3 c+3 d x]}{144 b d^2}-\frac{f \text{Cosh}[5 c+5 d x]}{400 b d^2}-\frac{a^3 \left(a^2+b^2\right) (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^6 d}-\frac{a^3 \left(a^2+b^2\right) (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^6 d}-\frac{a^3 \left(a^2+b^2\right) f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^6 d^2}-\frac{a^3 \left(a^2+b^2\right) f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^6 d^2}+\frac{a^4 (e+f x) \text{Sinh}[c+d x]}{b^5 d}+\frac{2 a^2 (e+f x) \text{Sinh}[c+d x]}{3 b^3 d}-\frac{(e+f x) \text{Sinh}[c+d x]}{8 b d}+\frac{a^3 f \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{4 b^4 d^2}+\frac{3 a f \text{Cosh}[c+d x] \text{Sinh}[c+d x]}{32 b^2 d^2}+\frac{a^2 (e+f x) \text{Cosh}[c+d x]^2 \text{Sinh}[c+d x]}{3 b^3 d}+\frac{a f \text{Cosh}[c+d x]^3 \text{Sinh}[c+d x]}{16 b^2 d^2}-\frac{a^3 (e+f x) \text{Sinh}[c+d x]^2}{2 b^4 d}+\frac{(e+f x) \text{Sinh}[3 c+3 d x]}{48 b d}+\frac{(e+f x) \text{Sinh}[5 c+5 d x]}{80 b d}$$

Result (type 4, 3316 leaves):

$$\frac{1}{8}\left(-\frac{8 a^5 e \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{b^6 d}-\frac{8 a^3 e \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{b^4 d}+\right.$$

$$\frac{8 a^5 c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{b^6 d^2}+\frac{8 a^3 c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{b^4 d^2}-\frac{1}{b^5 d^2}$$

$$8 a^5 f\left(\frac{(c+d x) \text{Log}[a+b \text{Sinh}[c+d x]]}{b}-\frac{1}{b}\,i\left(\frac{1}{2}\,i\left(\frac{\pi}{2}-i\,(c+d x)\right)^2-4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{i\,(a-i\,b)}{b}}}{\sqrt{2}}\right]\right.\right.$$

$$\text{ArcTan}\left[\frac{(a+\mathrm{i}\,b)\,\text{Tan}\left[\frac{1}{2}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)\right]}{\sqrt{a^2+b^2}}\right]-\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{\mathrm{i}\,(a-\mathrm{i}\,b)}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{\mathrm{i}\left(a-\sqrt{a^2+b^2}\right)\,e^{\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)}}{b}\right]-\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{\mathrm{i}\,(a-\mathrm{i}\,b)}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{\mathrm{i}\left(a+\sqrt{a^2+b^2}\right)\,e^{\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)}}{b}\right]+\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+$$

$$\mathrm{i}\left(\text{PolyLog}\left[2,-\frac{\mathrm{i}\left(a-\sqrt{a^2+b^2}\right)\,e^{\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{\mathrm{i}\left(a+\sqrt{a^2+b^2}\right)\,e^{\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)}}{b}\right]\right)\right)\right)-$$

$$\frac{1}{b^3\,d^2}\,8\,a^3\,f\left(\frac{(c+d\,x)\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]}{b}-\frac{1}{b}\,\mathrm{i}\left(\frac{1}{2}\,\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)^2-\right.\right.$$

$$4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{\frac{\mathrm{i}\,(a-\mathrm{i}\,b)}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{(a+\mathrm{i}\,b)\,\text{Tan}\left[\frac{1}{2}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)\right]}{\sqrt{a^2+b^2}}\right]-$$

$$\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{\mathrm{i}\,(a-\mathrm{i}\,b)}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\mathrm{i}\left(a-\sqrt{a^2+b^2}\right)\,e^{\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)}}{b}\right]-$$

$$\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{\mathrm{i}\,(a-\mathrm{i}\,b)}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\mathrm{i}\left(a+\sqrt{a^2+b^2}\right)\,e^{\mathrm{i}\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)}}{b}\right]+$$

$$\left(\frac{\pi}{2}-\mathrm{i}\,(c+d\,x)\right)\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+$$

$$\mathbb{i}\left(\text{PolyLog}\left[2,-\frac{\mathbb{i}\left(a-\sqrt{a^2+b^2}\right)\mathbb{e}^{\mathbb{i}\left(\frac{\pi}{2}-\mathbb{i}\,(c+d\,x)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{\mathbb{i}\left(a+\sqrt{a^2+b^2}\right)\mathbb{e}^{\mathbb{i}\left(\frac{\pi}{2}-\mathbb{i}\,(c+d\,x)\right)}}{b}\right]\right)\right)\right)+$$

$$\frac{1}{d}\left(\frac{\text{Cosh}[5\,(c+d\,x)]}{7200\,b^5\,d}-\frac{\text{Sinh}[5\,(c+d\,x)]}{7200\,b^5\,d}\right)\left(-360\,b^4\,d\,e-72\,b^4\,f+360\,b^4\,c\,f-\right.$$
$$360\,b^4\,f\,(c+d\,x)-900\,a\,b^3\,d\,e\,\text{Cosh}[c+d\,x]-225\,a\,b^3\,f\,\text{Cosh}[c+d\,x]+$$
$$900\,a\,b^3\,c\,f\,\text{Cosh}[c+d\,x]-900\,a\,b^3\,f\,(c+d\,x)\,\text{Cosh}[c+d\,x]-$$
$$2400\,a^2\,b^2\,d\,e\,\text{Cosh}[2\,(c+d\,x)]-600\,b^4\,d\,e\,\text{Cosh}[2\,(c+d\,x)]-$$
$$800\,a^2\,b^2\,f\,\text{Cosh}[2\,(c+d\,x)]-200\,b^4\,f\,\text{Cosh}[2\,(c+d\,x)]+$$
$$2400\,a^2\,b^2\,c\,f\,\text{Cosh}[2\,(c+d\,x)]+600\,b^4\,c\,f\,\text{Cosh}[2\,(c+d\,x)]-$$
$$2400\,a^2\,b^2\,f\,(c+d\,x)\,\text{Cosh}[2\,(c+d\,x)]-600\,b^4\,f\,(c+d\,x)\,\text{Cosh}[2\,(c+d\,x)]-$$
$$7200\,a^3\,b\,d\,e\,\text{Cosh}[3\,(c+d\,x)]-3600\,a\,b^3\,d\,e\,\text{Cosh}[3\,(c+d\,x)]-$$
$$3600\,a^3\,b\,f\,\text{Cosh}[3\,(c+d\,x)]-1800\,a\,b^3\,f\,\text{Cosh}[3\,(c+d\,x)]+$$
$$7200\,a^3\,b\,c\,f\,\text{Cosh}[3\,(c+d\,x)]+3600\,a\,b^3\,c\,f\,\text{Cosh}[3\,(c+d\,x)]-$$
$$7200\,a^3\,b\,f\,(c+d\,x)\,\text{Cosh}[3\,(c+d\,x)]-3600\,a\,b^3\,f\,(c+d\,x)\,\text{Cosh}[3\,(c+d\,x)]-$$
$$28\,800\,a^4\,d\,e\,\text{Cosh}[4\,(c+d\,x)]-21\,600\,a^2\,b^2\,d\,e\,\text{Cosh}[4\,(c+d\,x)]+$$
$$3600\,b^4\,d\,e\,\text{Cosh}[4\,(c+d\,x)]-28\,800\,a^4\,f\,\text{Cosh}[4\,(c+d\,x)]-$$
$$21\,600\,a^2\,b^2\,f\,\text{Cosh}[4\,(c+d\,x)]+3600\,b^4\,f\,\text{Cosh}[4\,(c+d\,x)]+$$
$$28\,800\,a^4\,c\,f\,\text{Cosh}[4\,(c+d\,x)]+21\,600\,a^2\,b^2\,c\,f\,\text{Cosh}[4\,(c+d\,x)]-$$
$$3600\,b^4\,c\,f\,\text{Cosh}[4\,(c+d\,x)]-28\,800\,a^4\,f\,(c+d\,x)\,\text{Cosh}[4\,(c+d\,x)]-$$
$$21\,600\,a^2\,b^2\,f\,(c+d\,x)\,\text{Cosh}[4\,(c+d\,x)]+3600\,b^4\,f\,(c+d\,x)\,\text{Cosh}[4\,(c+d\,x)]+$$
$$28\,800\,a^4\,d\,e\,\text{Cosh}[6\,(c+d\,x)]+21\,600\,a^2\,b^2\,d\,e\,\text{Cosh}[6\,(c+d\,x)]-$$
$$3600\,b^4\,d\,e\,\text{Cosh}[6\,(c+d\,x)]-28\,800\,a^4\,f\,\text{Cosh}[6\,(c+d\,x)]-$$
$$21\,600\,a^2\,b^2\,f\,\text{Cosh}[6\,(c+d\,x)]+3600\,b^4\,f\,\text{Cosh}[6\,(c+d\,x)]-$$
$$28\,800\,a^4\,c\,f\,\text{Cosh}[6\,(c+d\,x)]-21\,600\,a^2\,b^2\,c\,f\,\text{Cosh}[6\,(c+d\,x)]+$$
$$3600\,b^4\,c\,f\,\text{Cosh}[6\,(c+d\,x)]+28\,800\,a^4\,f\,(c+d\,x)\,\text{Cosh}[6\,(c+d\,x)]+$$
$$21\,600\,a^2\,b^2\,f\,(c+d\,x)\,\text{Cosh}[6\,(c+d\,x)]-3600\,b^4\,f\,(c+d\,x)\,\text{Cosh}[6\,(c+d\,x)]-$$
$$7200\,a^3\,b\,d\,e\,\text{Cosh}[7\,(c+d\,x)]-3600\,a\,b^3\,d\,e\,\text{Cosh}[7\,(c+d\,x)]+$$
$$3600\,a^3\,b\,f\,\text{Cosh}[7\,(c+d\,x)]+1800\,a\,b^3\,f\,\text{Cosh}[7\,(c+d\,x)]+7200\,a^3\,b\,c\,f\,\text{Cosh}[7\,(c+d\,x)]+$$
$$3600\,a\,b^3\,c\,f\,\text{Cosh}[7\,(c+d\,x)]-7200\,a^3\,b\,f\,(c+d\,x)\,\text{Cosh}[7\,(c+d\,x)]-$$
$$3600\,a\,b^3\,f\,(c+d\,x)\,\text{Cosh}[7\,(c+d\,x)]+2400\,a^2\,b^2\,d\,e\,\text{Cosh}[8\,(c+d\,x)]+$$
$$600\,b^4\,d\,e\,\text{Cosh}[8\,(c+d\,x)]-800\,a^2\,b^2\,f\,\text{Cosh}[8\,(c+d\,x)]-200\,b^4\,f\,\text{Cosh}[8\,(c+d\,x)]-$$
$$2400\,a^2\,b^2\,c\,f\,\text{Cosh}[8\,(c+d\,x)]-600\,b^4\,c\,f\,\text{Cosh}[8\,(c+d\,x)]+$$
$$2400\,a^2\,b^2\,f\,(c+d\,x)\,\text{Cosh}[8\,(c+d\,x)]+600\,b^4\,f\,(c+d\,x)\,\text{Cosh}[8\,(c+d\,x)]-$$
$$900\,a\,b^3\,d\,e\,\text{Cosh}[9\,(c+d\,x)]+225\,a\,b^3\,f\,\text{Cosh}[9\,(c+d\,x)]+$$
$$900\,a\,b^3\,c\,f\,\text{Cosh}[9\,(c+d\,x)]-900\,a\,b^3\,f\,(c+d\,x)\,\text{Cosh}[9\,(c+d\,x)]+$$
$$360\,b^4\,d\,e\,\text{Cosh}[10\,(c+d\,x)]-72\,b^4\,f\,\text{Cosh}[10\,(c+d\,x)]-360\,b^4\,c\,f\,\text{Cosh}[10\,(c+d\,x)]+$$
$$360\,b^4\,f\,(c+d\,x)\,\text{Cosh}[10\,(c+d\,x)]-900\,a\,b^3\,d\,e\,\text{Sinh}[c+d\,x]-$$
$$225\,a\,b^3\,f\,\text{Sinh}[c+d\,x]+900\,a\,b^3\,c\,f\,\text{Sinh}[c+d\,x]-900\,a\,b^3\,f\,(c+d\,x)\,\text{Sinh}[c+d\,x]-$$
$$2400\,a^2\,b^2\,d\,e\,\text{Sinh}[2\,(c+d\,x)]-600\,b^4\,d\,e\,\text{Sinh}[2\,(c+d\,x)]-800\,a^2\,b^2\,f\,\text{Sinh}[2\,(c+d\,x)]-$$

$200\,b^4\,f\,\text{Sinh}[2\,(c+d\,x)]+2400\,a^2\,b^2\,c\,f\,\text{Sinh}[2\,(c+d\,x)]+600\,b^4\,c\,f\,\text{Sinh}[2\,(c+d\,x)]-$
$2400\,a^2\,b^2\,f\,(c+d\,x)\,\text{Sinh}[2\,(c+d\,x)]-600\,b^4\,f\,(c+d\,x)\,\text{Sinh}[2\,(c+d\,x)]-$
$7200\,a^3\,b\,d\,e\,\text{Sinh}[3\,(c+d\,x)]-3600\,a\,b^3\,d\,e\,\text{Sinh}[3\,(c+d\,x)]-$
$3600\,a^3\,b\,f\,\text{Sinh}[3\,(c+d\,x)]-1800\,a\,b^3\,f\,\text{Sinh}[3\,(c+d\,x)]+7200\,a^3\,b\,c\,f\,\text{Sinh}[3\,(c+d\,x)]+$
$3600\,a\,b^3\,c\,f\,\text{Sinh}[3\,(c+d\,x)]-7200\,a^3\,b\,f\,(c+d\,x)\,\text{Sinh}[3\,(c+d\,x)]-$
$3600\,a\,b^3\,f\,(c+d\,x)\,\text{Sinh}[3\,(c+d\,x)]-28\,800\,a^4\,d\,e\,\text{Sinh}[4\,(c+d\,x)]-$
$21\,600\,a^2\,b^2\,d\,e\,\text{Sinh}[4\,(c+d\,x)]+3600\,b^4\,d\,e\,\text{Sinh}[4\,(c+d\,x)]-$
$28\,800\,a^4\,f\,\text{Sinh}[4\,(c+d\,x)]-21\,600\,a^2\,b^2\,f\,\text{Sinh}[4\,(c+d\,x)]+3600\,b^4\,f\,\text{Sinh}[4\,(c+d\,x)]+$
$28\,800\,a^4\,c\,f\,\text{Sinh}[4\,(c+d\,x)]+21\,600\,a^2\,b^2\,c\,f\,\text{Sinh}[4\,(c+d\,x)]-$
$3600\,b^4\,c\,f\,\text{Sinh}[4\,(c+d\,x)]-28\,800\,a^4\,f\,(c+d\,x)\,\text{Sinh}[4\,(c+d\,x)]-$
$21\,600\,a^2\,b^2\,f\,(c+d\,x)\,\text{Sinh}[4\,(c+d\,x)]+3600\,b^4\,f\,(c+d\,x)\,\text{Sinh}[4\,(c+d\,x)]+$
$28\,800\,a^4\,d\,e\,\text{Sinh}[6\,(c+d\,x)]+21\,600\,a^2\,b^2\,d\,e\,\text{Sinh}[6\,(c+d\,x)]-$
$3600\,b^4\,d\,e\,\text{Sinh}[6\,(c+d\,x)]-28\,800\,a^4\,f\,\text{Sinh}[6\,(c+d\,x)]-$
$21\,600\,a^2\,b^2\,f\,\text{Sinh}[6\,(c+d\,x)]+3600\,b^4\,f\,\text{Sinh}[6\,(c+d\,x)]-28\,800\,a^4\,c\,f\,\text{Sinh}[6\,(c+d\,x)]-$
$21\,600\,a^2\,b^2\,c\,f\,\text{Sinh}[6\,(c+d\,x)]+3600\,b^4\,c\,f\,\text{Sinh}[6\,(c+d\,x)]+$
$28\,800\,a^4\,f\,(c+d\,x)\,\text{Sinh}[6\,(c+d\,x)]+21\,600\,a^2\,b^2\,f\,(c+d\,x)\,\text{Sinh}[6\,(c+d\,x)]-$
$3600\,b^4\,f\,(c+d\,x)\,\text{Sinh}[6\,(c+d\,x)]-7200\,a^3\,b\,d\,e\,\text{Sinh}[7\,(c+d\,x)]-$
$3600\,a\,b^3\,d\,e\,\text{Sinh}[7\,(c+d\,x)]+3600\,a^3\,b\,f\,\text{Sinh}[7\,(c+d\,x)]+1800\,a\,b^3\,f\,\text{Sinh}[7\,(c+d\,x)]+$
$7200\,a^3\,b\,c\,f\,\text{Sinh}[7\,(c+d\,x)]+3600\,a\,b^3\,c\,f\,\text{Sinh}[7\,(c+d\,x)]-$
$7200\,a^3\,b\,f\,(c+d\,x)\,\text{Sinh}[7\,(c+d\,x)]-3600\,a\,b^3\,f\,(c+d\,x)\,\text{Sinh}[7\,(c+d\,x)]+$
$2400\,a^2\,b^2\,d\,e\,\text{Sinh}[8\,(c+d\,x)]+600\,b^4\,d\,e\,\text{Sinh}[8\,(c+d\,x)]-800\,a^2\,b^2\,f\,\text{Sinh}[8\,(c+d\,x)]-$
$200\,b^4\,f\,\text{Sinh}[8\,(c+d\,x)]-2400\,a^2\,b^2\,c\,f\,\text{Sinh}[8\,(c+d\,x)]-600\,b^4\,c\,f\,\text{Sinh}[8\,(c+d\,x)]+$
$2400\,a^2\,b^2\,f\,(c+d\,x)\,\text{Sinh}[8\,(c+d\,x)]+600\,b^4\,f\,(c+d\,x)\,\text{Sinh}[8\,(c+d\,x)]-$
$900\,a\,b^3\,d\,e\,\text{Sinh}[9\,(c+d\,x)]+225\,a\,b^3\,f\,\text{Sinh}[9\,(c+d\,x)]+$
$900\,a\,b^3\,c\,f\,\text{Sinh}[9\,(c+d\,x)]-900\,a\,b^3\,f\,(c+d\,x)\,\text{Sinh}[9\,(c+d\,x)]+$
$360\,b^4\,d\,e\,\text{Sinh}[10\,(c+d\,x)]-72\,b^4\,f\,\text{Sinh}[10\,(c+d\,x)]-$

$\left.360\,b^4\,c\,f\,\text{Sinh}[10\,(c+d\,x)]+360\,b^4\,f\,(c+d\,x)\,\text{Sinh}[10\,(c+d\,x)]\,)\right)$

Problem 405: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]^3\,\text{Sinh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 406: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Sinh}[c+d x]^2 \operatorname{Tanh}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 1519 leaves, 61 steps):

$$\frac{a (e+f x)^4}{4 b^2 f}+\frac{2 a^2 (e+f x)^3 \operatorname{ArcTan}\left[e^{c+d x}\right]}{b^3 d}-\frac{2 (e+f x)^3 \operatorname{ArcTan}\left[e^{c+d x}\right]}{b d}-\frac{2 a^4 (e+f x)^3 \operatorname{ArcTan}\left[e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d}-\frac{6 f^3 \operatorname{Cosh}[c+d x]}{b d^4}-\frac{3 f (e+f x)^2 \operatorname{Cosh}[c+d x]}{b d^2}-\frac{a^3 (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 \left(a^2+b^2\right) d}-\frac{a^3 (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 \left(a^2+b^2\right) d}+\frac{a (e+f x)^3 \operatorname{Log}\left[1+e^{2 (c+d x)}\right]}{b^2 d}+\frac{a^3 (e+f x)^3 \operatorname{Log}\left[1+e^{2 (c+d x)}\right]}{b^2 \left(a^2+b^2\right) d}-\frac{3 i a^2 f (e+f x)^2 \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{b^3 d^2}+\frac{3 i f (e+f x)^2 \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{b d^2}+\frac{3 i a^4 f (e+f x)^2 \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^2}+\frac{3 i a^2 f (e+f x)^2 \operatorname{PolyLog}\left[2,i e^{c+d x}\right]}{b^3 d^2}-\frac{3 i f (e+f x)^2 \operatorname{PolyLog}\left[2,i e^{c+d x}\right]}{b d^2}-\frac{3 i a^4 f (e+f x)^2 \operatorname{PolyLog}\left[2,i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^2}-\frac{3 a^3 f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 \left(a^2+b^2\right) d^2}-\frac{3 a^3 f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 \left(a^2+b^2\right) d^2}+\frac{3 a f (e+f x)^2 \operatorname{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{2 b^2 d^2}+\frac{3 a^3 f (e+f x)^2 \operatorname{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{2 b^2 \left(a^2+b^2\right) d^2}+\frac{6 i a^2 f^2 (e+f x) \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{b^3 d^3}-\frac{6 i f^2 (e+f x) \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{b d^3}-\frac{6 i a^4 f^2 (e+f x) \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^3}-\frac{6 i a^2 f^2 (e+f x) \operatorname{PolyLog}\left[3,i e^{c+d x}\right]}{b^3 d^3}+\frac{6 i f^2 (e+f x) \operatorname{PolyLog}\left[3,i e^{c+d x}\right]}{b d^3}+\frac{6 i a^4 f^2 (e+f x) \operatorname{PolyLog}\left[3,i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^3}+\frac{6 a^3 f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b^2 \left(a^2+b^2\right) d^3}+\frac{6 a^3 f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b^2 \left(a^2+b^2\right) d^3}+\frac{3 a f^2 (e+f x) \operatorname{PolyLog}\left[3,-e^{2 (c+d x)}\right]}{2 b^2 d^3}-\frac{3 a^3 f^2 (e+f x) \operatorname{PolyLog}\left[3,-e^{2 (c+d x)}\right]}{2 b^2 \left(a^2+b^2\right) d^3}-\frac{6 i a^2 f^3 \operatorname{PolyLog}\left[4,-i e^{c+d x}\right]}{b^3 d^4}+$$

$$\frac{6\,i\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]}{b\,d^4}+\frac{6\,i\,a^4\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]}{b^3\,\left(a^2+b^2\right)\,d^4}+\frac{6\,i\,a^2\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]}{b^3\,d^4}-$$

$$\frac{6\,i\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]}{b\,d^4}-\frac{6\,i\,a^4\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]}{b^3\,\left(a^2+b^2\right)\,d^4}-\frac{6\,a^3\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{b^2\,\left(a^2+b^2\right)\,d^4}-$$

$$\frac{6\,a^3\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{b^2\,\left(a^2+b^2\right)\,d^4}-\frac{3\,a\,f^3\,\text{PolyLog}\left[4,-e^{2\,(c+d\,x)}\right]}{4\,b^2\,d^4}+$$

$$\frac{3\,a^3\,f^3\,\text{PolyLog}\left[4,-e^{2\,(c+d\,x)}\right]}{4\,b^2\,\left(a^2+b^2\right)\,d^4}+\frac{6\,f^2\,(e+f\,x)\,\text{Sinh}[c+d\,x]}{b\,d^3}+\frac{(e+f\,x)^3\,\text{Sinh}[c+d\,x]}{b\,d}$$

Result (type 4, 4100 leaves) :

$$-\frac{1}{4\,\left(a^2+b^2\right)\,d^4\,\left(1+e^{2\,c}\right)}$$

$$\Big(-8\,a\,d^4\,e^3\,e^{2\,c}\,x-12\,a\,d^4\,e^2\,e^{2\,c}\,f\,x^2-8\,a\,d^4\,e\,e^{2\,c}\,f^2\,x^3-2\,a\,d^4\,e^{2\,c}\,f^3\,x^4+8\,b\,d^3\,e^3\,\text{ArcTan}\left[e^{c+d\,x}\right]+$$
$$8\,b\,d^3\,e^3\,e^{2\,c}\,\text{ArcTan}\left[e^{c+d\,x}\right]+12\,i\,b\,d^3\,e^2\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+12\,i\,b\,d^3\,e^2\,e^{2\,c}\,f\,x$$
$$\text{Log}\left[1-i\,e^{c+d\,x}\right]+12\,i\,b\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+12\,i\,b\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+$$
$$4\,i\,b\,d^3\,f^3\,x^3\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+4\,i\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-$$
$$12\,i\,b\,d^3\,e^2\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-12\,i\,b\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$
$$12\,i\,b\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-12\,i\,b\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$
$$4\,i\,b\,d^3\,f^3\,x^3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-4\,i\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+$$
$$4\,a\,d^3\,e^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+4\,a\,d^3\,e^3\,e^{2\,c}\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,a\,d^3\,e^2\,f\,x\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$12\,a\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,a\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$12\,a\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+4\,a\,d^3\,f^3\,x^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$4\,a\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-12\,i\,b\,d^2\,\left(1+e^{2\,c}\right)\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-i\,e^{c+d\,x}\right]+$$
$$12\,i\,b\,d^2\,\left(1+e^{2\,c}\right)\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,i\,e^{c+d\,x}\right]+$$
$$6\,a\,d^2\,e^2\,f\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+6\,a\,d^2\,e^2\,e^{2\,c}\,f\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+$$
$$12\,a\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+12\,a\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+$$
$$6\,a\,d^2\,f^3\,x^2\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+6\,a\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{PolyLog}\left[2,-e^{2\,(c+d\,x)}\right]+$$
$$24\,i\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+24\,i\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+$$
$$24\,i\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]+24\,i\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,-i\,e^{c+d\,x}\right]-$$
$$24\,i\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-24\,i\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-$$
$$24\,i\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-24\,i\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,i\,e^{c+d\,x}\right]-$$
$$6\,a\,d\,e\,f^2\,\text{PolyLog}\left[3,-e^{2\,(c+d\,x)}\right]-6\,a\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-e^{2\,(c+d\,x)}\right]-$$
$$6\,a\,d\,f^3\,x\,\text{PolyLog}\left[3,-e^{2\,(c+d\,x)}\right]-6\,a\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,-e^{2\,(c+d\,x)}\right]-$$
$$24\,i\,b\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]-24\,i\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,-i\,e^{c+d\,x}\right]+$$
$$24\,i\,b\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]+24\,i\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,i\,e^{c+d\,x}\right]+$$
$$3\,a\,f^3\,\text{PolyLog}\left[4,-e^{2\,(c+d\,x)}\right]+3\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,-e^{2\,(c+d\,x)}\right]\Big)+$$

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

$$6\,d^3\,e^2\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$2\,d^3\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$6\,d^3\,e^2\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$2\,d^3\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\Big[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\Big[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-$$

$$12\,d\,e\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+12\,d\,e\,e^{2\,c}\,f^2$$

$$\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,d\,f^3\,x\,\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+12\,d$$

$$e^{2\,c}\,f^3\,x\,\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,d\,e\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,d\,f^3\,x$$

$$\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\Big[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$12\,f^3\,\text{PolyLog}\Big[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\Big[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$12\,f^3\,\text{PolyLog}\Big[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\Big[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]\Bigg)-$$

$$\Big(3\,x^2\,\big(a^3\,e^2\,f+a\,b^2\,e^2\,f+2\,a^3\,e^2\,f\,\text{Cosh}[2\,c]-2\,a\,b^2\,e^2\,f\,\text{Cosh}[2\,c]+$$
$$a^3\,e^2\,f\,\text{Cosh}[4\,c]+a\,b^2\,e^2\,f\,\text{Cosh}[4\,c]+2\,a^3\,e^2\,f\,\text{Sinh}[2\,c]-$$
$$2\,a\,b^2\,e^2\,f\,\text{Sinh}[2\,c]+a^3\,e^2\,f\,\text{Sinh}[4\,c]+a\,b^2\,e^2\,f\,\text{Sinh}[4\,c]\big)\Big)\Big/$$
$$\Big(2\,b^2\,\left(a^2+b^2\right)\,\left(-1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)\,\left(1+\text{Cosh}[2\,c]+\text{Sinh}[2\,c]\right)\Big)-$$

$$\left(x^3 \left(a^3 e f^2 + a b^2 e f^2 + 2 a^3 e f^2 \text{Cosh}[2 c] - 2 a b^2 e f^2 \text{Cosh}[2 c] + a^3 e f^2 \text{Cosh}[4 c] + a b^2 e f^2 \text{Cosh}[4 c] + 2 a^3 e f^2 \text{Sinh}[2 c] - 2 a b^2 e f^2 \text{Sinh}[2 c] + a^3 e f^2 \text{Sinh}[4 c] + a b^2 e f^2 \text{Sinh}[4 c]\right)\right) \Big/ \left(b^2 \left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right) - \left(x^4 \left(a^3 f^3 + a b^2 f^3 + 2 a^3 f^3 \text{Cosh}[2 c] - 2 a b^2 f^3 \text{Cosh}[2 c] + a^3 f^3 \text{Cosh}[4 c] + a b^2 f^3 \text{Cosh}[4 c] + 2 a^3 f^3 \text{Sinh}[2 c] - 2 a b^2 f^3 \text{Sinh}[2 c] + a^3 f^3 \text{Sinh}[4 c] + a b^2 f^3 \text{Sinh}[4 c]\right)\right) \Big/ \left(4 b^2 \left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right) + x \left(-\left(\left(a e^3\right) \Big/ \left(\left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right)\right) - \left(a^3 e^3\right) \Big/ \left(b^2 \left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right) + \left(2 a e^3 \text{Cosh}[2 c] + 2 a e^3 \text{Sinh}[2 c]\right) \Big/ \left(\left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right) + \left(-\frac{2 a^3 e^3 \text{Cosh}[2 c]}{b^2} - \frac{2 a^3 e^3 \text{Sinh}[2 c]}{b^2}\right) \Big/ \left(\left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right) + \left(-a e^3 \text{Cosh}[4 c] - a e^3 \text{Sinh}[4 c]\right) \Big/ \left(\left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right) + \left(-\frac{a^3 e^3 \text{Cosh}[4 c]}{b^2} - \frac{a^3 e^3 \text{Sinh}[4 c]}{b^2}\right) \Big/ \left(\left(a^2 + b^2\right) \left(-1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right) \left(1 + \text{Cosh}[2 c] + \text{Sinh}[2 c]\right)\right)\right) + \left(-\frac{f^3 x^3 \text{Cosh}[c]}{2 b d} + \frac{f^3 x^3 \text{Sinh}[c]}{2 b d} + \left(d^3 e^3 + 3 d^2 e^2 f + 6 d e f^2 + 6 f^3\right) \left(-\frac{\text{Cosh}[c]}{2 b d^4} + \frac{\text{Sinh}[c]}{2 b d^4}\right) + \left(d^2 e^2 f + 2 d e f^2 + 2 f^3\right) \left(-\frac{3 x \text{Cosh}[c]}{2 b d^3} + \frac{3 x \text{Sinh}[c]}{2 b d^3}\right) + \left(d e f^2 + f^3\right) \left(-\frac{3 x^2 \text{Cosh}[c]}{2 b d^2} + \frac{3 x^2 \text{Sinh}[c]}{2 b d^2}\right)\right) \left(\text{Cosh}[d x] - \text{Sinh}[d x]\right) + \left(\frac{f^3 x^3 \text{Cosh}[c]}{2 b d} + \frac{f^3 x^3 \text{Sinh}[c]}{2 b d} + \left(d^3 e^3 - 3 d^2 e^2 f + 6 d e f^2 - 6 f^3\right) \left(\frac{\text{Cosh}[c]}{2 b d^4} + \frac{\text{Sinh}[c]}{2 b d^4}\right) + \frac{3 x^2 \left(d e f^2 \text{Cosh}[c] - f^3 \text{Cosh}[c] + d e f^2 \text{Sinh}[c] - f^3 \text{Sinh}[c]\right)}{2 b d^2} + \frac{1}{2 b d^3} 3 x \left(d^2 e^2 f \text{Cosh}[c] - 2 d e f^2 \text{Cosh}[c] + 2 f^3 \text{Cosh}[c] + d^2 e^2 f \text{Sinh}[c] - 2 d e f^2 \text{Sinh}[c] + 2 f^3 \text{Sinh}[c]\right)\right) \left(\text{Cosh}[d x] + \text{Sinh}[d x]\right)$$

Problem 410: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Sinh}[c + d x]^2 \text{Tanh}[c + d x]}{(e + f x) \left(a + b \text{Sinh}[c + d x]\right)} \, dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c + d x]^2 \text{Tanh}[c + d x]}{(e + f x) \left(a + b \text{Sinh}[c + d x]\right)}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 413: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(e+f x)\,\mathrm{Sinh}[c+d x]\,\mathrm{Tanh}[c+d x]^2}{a+b\,\mathrm{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 454 leaves, 25 steps):

$$\frac{e x}{b}+\frac{f x^2}{2 b}-\frac{a f \mathrm{ArcTan}[\mathrm{Sinh}[c+d x]]}{b^2 d^2}+\frac{a^3 f \mathrm{ArcTan}[\mathrm{Sinh}[c+d x]]}{b^2 \left(a^2+b^2\right) d^2}-\frac{a^3 (e+f x) \mathrm{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d}+\frac{a^3 (e+f x) \mathrm{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d}-\frac{a^2 f \mathrm{Log}[\mathrm{Cosh}[c+d x]]}{b^3 d^2}+\frac{f \mathrm{Log}[\mathrm{Cosh}[c+d x]]}{b d^2}+\frac{a^4 f \mathrm{Log}[\mathrm{Cosh}[c+d x]]}{b^3 \left(a^2+b^2\right) d^2}-\frac{a^3 f \mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d^2}+\frac{a^3 f \mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{b \left(a^2+b^2\right)^{3/2} d^2}+\frac{a (e+f x) \mathrm{Sech}[c+d x]}{b^2 d}-\frac{a^3 (e+f x) \mathrm{Sech}[c+d x]}{b^2 \left(a^2+b^2\right) d}+\frac{a^2 (e+f x) \mathrm{Tanh}[c+d x]}{b^3 d}-\frac{(e+f x) \mathrm{Tanh}[c+d x]}{b d}-\frac{a^4 (e+f x) \mathrm{Tanh}[c+d x]}{b^3 \left(a^2+b^2\right) d}$$

Result (type 4, 519 leaves):

$$\frac{(c+d x) (2 d e-2 c f+f (c+d x))}{2 b d^2}-\frac{f \mathrm{ArcTan}\left[\mathrm{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{(a-i b) d^2}-\frac{f \mathrm{ArcTan}\left[\mathrm{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{(a+i b) d^2}-\frac{i f \mathrm{Log}[\mathrm{Cosh}[c+d x]]}{2 (a-i b) d^2}+\frac{i f \mathrm{Log}[\mathrm{Cosh}[c+d x]]}{2 (a+i b) d^2}+\left(a^3 \left(a^2+b^2\right) \left(2 \sqrt{a^2+b^2}\, d e \mathrm{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]-2 \sqrt{a^2+b^2}\, c f \mathrm{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]+\sqrt{-a^2-b^2}\, f (c+d x) \mathrm{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\, f (c+d x) \mathrm{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]+\sqrt{-a^2-b^2}\, f \mathrm{PolyLog}\left[2,\frac{b e^{c+d x}}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\, f \mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)\Big/\left(b \left(-\left(a^2+b^2\right)^2\right)^{3/2} d^2\right)+\frac{1}{\left(a^2+b^2\right) d^2}\mathrm{Sech}[c+d x] (a d e-a c f+a f (c+d x)-b d e \mathrm{Sinh}[c+d x]+b c f \mathrm{Sinh}[c+d x]-b f (c+d x) \mathrm{Sinh}[c+d x])$$

Problem 415: Attempted integration timed out after 120 seconds.

$$\int \frac{\mathrm{Sinh}[c+d x]\,\mathrm{Tanh}[c+d x]^2}{(e+f x)\,(a+b\,\mathrm{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Sinh}[c+d x]\,\text{Tanh}[c+d x]^2}{(e+f x)\,(a+b\,\text{Sinh}[c+d x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 416: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2\,\text{Tanh}[c+d x]^3}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 1479 leaves, 71 steps):

$$\frac{a^2 (e+f x)^2 \text{ArcTan}\left[e^{c+d x}\right]}{b^3 d}+\frac{(e+f x)^2 \text{ArcTan}\left[e^{c+d x}\right]}{b d}-\frac{2 a^4 (e+f x)^2 \text{ArcTan}\left[e^{c+d x}\right]}{b \left(a^2+b^2\right)^2 d}-$$
$$\frac{a^4 (e+f x)^2 \text{ArcTan}\left[e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d}-\frac{a^2 f^2 \text{ArcTan}[\text{Sinh}[c+d x]]}{b^3 d^3}+\frac{f^2 \text{ArcTan}[\text{Sinh}[c+d x]]}{b d^3}+$$
$$\frac{a^4 f^2 \text{ArcTan}[\text{Sinh}[c+d x]]}{b^3 \left(a^2+b^2\right) d^3}-\frac{a^3 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d}-\frac{a^3 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d}+$$
$$\frac{a^3 (e+f x)^2 \text{Log}\left[1+e^{2 (c+d x)}\right]}{\left(a^2+b^2\right)^2 d}+\frac{a f^2 \text{Log}[\text{Cosh}[c+d x]]}{b^2 d^3}-\frac{a^3 f^2 \text{Log}[\text{Cosh}[c+d x]]}{b^2 \left(a^2+b^2\right) d^3}-$$
$$\frac{i a^2 f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]}{b^3 d^2}-\frac{i f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]}{b d^2}+$$
$$\frac{2 i a^4 f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]}{b \left(a^2+b^2\right)^2 d^2}+\frac{i a^4 f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^2}+$$
$$\frac{i a^2 f (e+f x) \text{PolyLog}\left[2,i e^{c+d x}\right]}{b^3 d^2}+\frac{i f (e+f x) \text{PolyLog}\left[2,i e^{c+d x}\right]}{b d^2}-$$
$$\frac{2 i a^4 f (e+f x) \text{PolyLog}\left[2,i e^{c+d x}\right]}{b \left(a^2+b^2\right)^2 d^2}-\frac{i a^4 f (e+f x) \text{PolyLog}\left[2,i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^2}-$$
$$\frac{2 a^3 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^2}-\frac{2 a^3 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^2}+$$
$$\frac{a^3 f (e+f x) \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{\left(a^2+b^2\right)^2 d^2}+\frac{i a^2 f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]}{b^3 d^3}+\frac{i f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]}{b d^3}-$$
$$\frac{2 i a^4 f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]}{b \left(a^2+b^2\right)^2 d^3}-\frac{i a^4 f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^3}-\frac{i a^2 f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]}{b^3 d^3}-$$
$$\frac{i f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]}{b d^3}+\frac{2 i a^4 f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]}{b \left(a^2+b^2\right)^2 d^3}+\frac{i a^4 f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]}{b^3 \left(a^2+b^2\right) d^3}+$$

$$\frac{2 a^3 f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^3}+\frac{2 a^3 f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{\left(a^2+b^2\right)^2 d^3}-\frac{a^3 f^2 \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]}{2 \left(a^2+b^2\right)^2 d^3}+$$
$$\frac{a^2 f (e+f x) \text{Sech}[c+d x]}{b^3 d^2}-\frac{f (e+f x) \text{Sech}[c+d x]}{b d^2}-\frac{a^4 f (e+f x) \text{Sech}[c+d x]}{b^3 \left(a^2+b^2\right) d^2}+$$
$$\frac{a (e+f x)^2 \text{Sech}[c+d x]^2}{2 b^2 d}-\frac{a^3 (e+f x)^2 \text{Sech}[c+d x]^2}{2 b^2 \left(a^2+b^2\right) d}-\frac{a f (e+f x) \text{Tanh}[c+d x]}{b^2 d^2}+$$
$$\frac{a^3 f (e+f x) \text{Tanh}[c+d x]}{b^2 \left(a^2+b^2\right) d^2}+\frac{a^2 (e+f x)^2 \text{Sech}[c+d x] \text{Tanh}[c+d x]}{2 b^3 d}-$$
$$\frac{(e+f x)^2 \text{Sech}[c+d x] \text{Tanh}[c+d x]}{2 b d}-\frac{a^4 (e+f x)^2 \text{Sech}[c+d x] \text{Tanh}[c+d x]}{2 b^3 \left(a^2+b^2\right) d}$$

Result (type 4, 3102 leaves):

$$\frac{1}{6 \left(a^2+b^2\right)^2 d^3 \left(1+e^{2 c}\right)}$$
$$\Big(-12 a^3 d^3 e^2 e^{2 c} x-12 a^3 d e^{2 c} f^2 x-12 a b^2 d e^{2 c} f^2 x-12 a^3 d^3 e e^{2 c} f x^2-4 a^3 d^3 e^{2 c} f^2 x^3+$$
$$18 a^2 b d^2 e^2 \text{ArcTan}\left[e^{c+d x}\right]+6 b^3 d^2 e^2 \text{ArcTan}\left[e^{c+d x}\right]+18 a^2 b d^2 e^2 e^{2 c} \text{ArcTan}\left[e^{c+d x}\right]+$$
$$6 b^3 d^2 e^2 e^{2 c} \text{ArcTan}\left[e^{c+d x}\right]+12 a^2 b f^2 \text{ArcTan}\left[e^{c+d x}\right]+12 b^3 f^2 \text{ArcTan}\left[e^{c+d x}\right]+$$
$$12 a^2 b e^{2 c} f^2 \text{ArcTan}\left[e^{c+d x}\right]+12 b^3 e^{2 c} f^2 \text{ArcTan}\left[e^{c+d x}\right]+18 i a^2 b d^2 e f x \text{Log}\left[1-i e^{c+d x}\right]+$$
$$6 i b^3 d^2 e f x \text{Log}\left[1-i e^{c+d x}\right]+18 i a^2 b d^2 e e^{2 c} f x \text{Log}\left[1-i e^{c+d x}\right]+$$
$$6 i b^3 d^2 e e^{2 c} f x \text{Log}\left[1-i e^{c+d x}\right]+9 i a^2 b d^2 f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]+$$
$$3 i b^3 d^2 f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]+9 i a^2 b d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]+$$
$$3 i b^3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]-18 i a^2 b d^2 e f x \text{Log}\left[1+i e^{c+d x}\right]-$$
$$6 i b^3 d^2 e f x \text{Log}\left[1+i e^{c+d x}\right]-18 i a^2 b d^2 e e^{2 c} f x \text{Log}\left[1+i e^{c+d x}\right]-$$
$$6 i b^3 d^2 e e^{2 c} f x \text{Log}\left[1+i e^{c+d x}\right]-9 i a^2 b d^2 f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]-$$
$$3 i b^3 d^2 f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]-9 i a^2 b d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]-$$
$$3 i b^3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]+6 a^3 d^2 e^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$6 a^3 d^2 e^2 e^{2 c} \text{Log}\left[1+e^{2 (c+d x)}\right]+6 a^3 f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+6 a b^2 f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$6 a^3 e^{2 c} f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+6 a b^2 e^{2 c} f^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+12 a^3 d^2 e f x \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$12 a^3 d^2 e e^{2 c} f x \text{Log}\left[1+e^{2 (c+d x)}\right]+6 a^3 d^2 f^2 x^2 \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$6 a^3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{2 (c+d x)}\right]-6 i b \left(3 a^2+b^2\right) d \left(1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]+$$
$$6 i b \left(3 a^2+b^2\right) d \left(1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2, i e^{c+d x}\right]+$$
$$6 a^3 d e f \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+6 a^3 d e e^{2 c} f \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+$$
$$6 a^3 d f^2 x \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+6 a^3 d e^{2 c} f^2 x \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+$$
$$18 i a^2 b f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]+6 i b^3 f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]+$$
$$18 i a^2 b e^{2 c} f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]+6 i b^3 e^{2 c} f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]-$$
$$18 i a^2 b f^2 \text{PolyLog}\left[3, i e^{c+d x}\right]-6 i b^3 f^2 \text{PolyLog}\left[3, i e^{c+d x}\right]-$$
$$18 i a^2 b e^{2 c} f^2 \text{PolyLog}\left[3, i e^{c+d x}\right]-6 i b^3 e^{2 c} f^2 \text{PolyLog}\left[3, i e^{c+d x}\right]-$$
$$3 a^3 f^2 \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]-3 a^3 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]\Big)+$$
$$\frac{1}{3 \left(a^2+b^2\right)^2 d^3 \left(-1+e^{2 c}\right)} a^3 \Bigg(6 d^3 e^2 e^{2 c} x+6 d^3 e e^{2 c} f x^2+2 d^3 e^{2 c} f^2 x^3+$$
$$3 d^2 e^2 \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]-3 d^2 e^2 e^{2 c} \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]+$$

$$6 d^2 e f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e e^{2 c} f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$3 d^2 f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$6 d^2 e f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e e^{2 c} f x \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$3 d^2 f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 d \left(-1+e^{2 c}\right) f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 d \left(-1+e^{2 c}\right) f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\Bigg)+$$
$$\frac{1}{24 \left(a^2+b^2\right)^2 d^2} \operatorname{Csch}[c] \operatorname{Sech}[c] \operatorname{Sech}[c+d x]^2 \Big(-6 a^3 e f-6 a b^2 e f-12 a^3 d^2 e^2 x-$$
$$6 a^3 f^2 x-6 a b^2 f^2 x-12 a^3 d^2 e f x^2-4 a^3 d^2 f^2 x^3+6 a^3 e f \operatorname{Cosh}[2 c]+6 a b^2 e f \operatorname{Cosh}[2 c]+$$
$$6 a^3 f^2 x \operatorname{Cosh}[2 c]+6 a b^2 f^2 x \operatorname{Cosh}[2 c]+6 a^3 e f \operatorname{Cosh}[2 d x]+6 a b^2 e f \operatorname{Cosh}[2 d x]+$$
$$6 a^3 f^2 x \operatorname{Cosh}[2 d x]+6 a b^2 f^2 x \operatorname{Cosh}[2 d x]+3 a^2 b d e^2 \operatorname{Cosh}[c-d x]+3 b^3 d e^2 \operatorname{Cosh}[c-d x]+$$
$$6 a^2 b d e f x \operatorname{Cosh}[c-d x]+6 b^3 d e f x \operatorname{Cosh}[c-d x]+3 a^2 b d f^2 x^2 \operatorname{Cosh}[c-d x]+$$
$$3 b^3 d f^2 x^2 \operatorname{Cosh}[c-d x]-3 a^2 b d e^2 \operatorname{Cosh}[3 c+d x]-3 b^3 d e^2 \operatorname{Cosh}[3 c+d x]-$$
$$6 a^2 b d e f x \operatorname{Cosh}[3 c+d x]-6 b^3 d e f x \operatorname{Cosh}[3 c+d x]-3 a^2 b d f^2 x^2 \operatorname{Cosh}[3 c+d x]-$$
$$3 b^3 d f^2 x^2 \operatorname{Cosh}[3 c+d x]-6 a^3 e f \operatorname{Cosh}[2 c+2 d x]-6 a b^2 e f \operatorname{Cosh}[2 c+2 d x]-$$
$$12 a^3 d^2 e^2 x \operatorname{Cosh}[2 c+2 d x]-6 a^3 f^2 x \operatorname{Cosh}[2 c+2 d x]-6 a b^2 f^2 x \operatorname{Cosh}[2 c+2 d x]-$$
$$12 a^3 d^2 e f x^2 \operatorname{Cosh}[2 c+2 d x]-4 a^3 d^2 f^2 x^3 \operatorname{Cosh}[2 c+2 d x]+6 a^3 d e^2 \operatorname{Sinh}[2 c]+$$
$$6 a b^2 d e^2 \operatorname{Sinh}[2 c]+12 a^3 d e f x \operatorname{Sinh}[2 c]+12 a b^2 d e f x \operatorname{Sinh}[2 c]+6 a^3 d f^2 x^2 \operatorname{Sinh}[2 c]+$$
$$6 a b^2 d f^2 x^2 \operatorname{Sinh}[2 c]-6 a^2 b e f \operatorname{Sinh}[c-d x]-6 b^3 e f \operatorname{Sinh}[c-d x]-$$
$$6 a^2 b f^2 x \operatorname{Sinh}[c-d x]-6 b^3 f^2 x \operatorname{Sinh}[c-d x]-6 a^2 b e f \operatorname{Sinh}[3 c+d x]-$$
$$6 b^3 e f \operatorname{Sinh}[3 c+d x]-6 a^2 b f^2 x \operatorname{Sinh}[3 c+d x]-6 b^3 f^2 x \operatorname{Sinh}[3 c+d x]\Big)$$

Problem 419: Attempted integration timed out after 120 seconds.

$$\int \frac{\operatorname{Tanh}[c+d x]^3}{(e+f x)\,(a+b \operatorname{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Tanh}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 420: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 451 leaves, 18 steps):

$$-\frac{(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,d}-\frac{(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,d}+\frac{(e+f\,x)^3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a\,d}-\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,d^2}-\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,d^2}+\frac{3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]}{2\,a\,d^2}+\frac{6\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,d^3}+\frac{6\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,d^3}-\frac{3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,e^{2\,(c+d\,x)}\right]}{2\,a\,d^3}-\frac{6\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,d^4}-\frac{6\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,d^4}+\frac{3\,f^3\,\text{PolyLog}\left[4,e^{2\,(c+d\,x)}\right]}{4\,a\,d^4}$$

Result (type 4, 1002 leaves):

$$-\frac{1}{4\,a\,d^4}\left(-4\,d^3\,e^3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-12\,d^3\,e^2\,f\,x\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-12\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-\right.$$
$$4\,d^3\,f^3\,x^3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]+4\,d^3\,e^3\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$12\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$4\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+4\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d^2\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+12\,d^2\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d^2\,e^2\,f\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$24\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$12\,d^2\,f^3\,x^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,d\,e\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+$$
$$6\,d\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]-24\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$24\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-24\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$24\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]+$$
$$\left.24\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+24\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)$$

Problem 422: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{\left(e+f\,x\right)\,\text{Coth}\left[c+d\,x\right]}{a+b\,\text{Sinh}\left[c+d\,x\right]}\,dx$$

Optimal (type 4, 205 leaves, 12 steps):

$$-\frac{(e+f x) \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a d}-\frac{(e+f x) \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a d}+\frac{(e+f x) \operatorname{Log}\left[1-e^{2 (c+d x)}\right]}{a d}-\frac{f \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a d^2}-\frac{f \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a d^2}+\frac{f \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]}{2 a d^2}$$

Result (type 4, 443 leaves):

$$\frac{1}{a d^2}\Bigg(f (c+d x) \operatorname{Log}\left[1-e^{-2 (c+d x)}\right]+d e \operatorname{Log}[\operatorname{Sinh}[c+d x]]-$$
$$c f \operatorname{Log}[\operatorname{Sinh}[c+d x]]-f (c+d x) \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]-d e \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]+$$
$$c f \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]+\frac{1}{2} f\left((c+d x)^2-\operatorname{PolyLog}\left[2, e^{-2 (c+d x)}\right]\right)+i f$$
$$\Bigg(-\frac{1}{8} i (2 c+i \pi+2 d x)^2-4 i \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{ArcTan}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]-$$
$$\frac{1}{2}\left(-2 i c+\pi-2 i d x+4 \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$
$$\frac{1}{2}\left(-2 i c+\pi-2 i d x-4 \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$
$$\left(\frac{\pi}{2}-i (c+d x)\right) \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]+$$
$$i\left(\operatorname{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+\operatorname{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\right)\Bigg)\Bigg)$$

Problem 425: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Cosh}[c+d x] \operatorname{Coth}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 638 leaves, 33 steps):

$$\frac{(e+fx)^4}{4bf}-\frac{2(e+fx)^3\,\text{ArcTanh}\left[e^{c+dx}\right]}{ad}-\frac{\sqrt{a^2+b^2}\,(e+fx)^3\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a\,b\,d}+$$
$$\frac{\sqrt{a^2+b^2}\,(e+fx)^3\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a\,b\,d}-\frac{3f(e+fx)^2\,\text{PolyLog}\left[2,-e^{c+dx}\right]}{a\,d^2}+$$
$$\frac{3f(e+fx)^2\,\text{PolyLog}\left[2,e^{c+dx}\right]}{a\,d^2}-\frac{3\sqrt{a^2+b^2}\,f(e+fx)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a\,b\,d^2}+$$
$$\frac{3\sqrt{a^2+b^2}\,f(e+fx)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a\,b\,d^2}+\frac{6f^2(e+fx)\,\text{PolyLog}\left[3,-e^{c+dx}\right]}{a\,d^3}-$$
$$\frac{6f^2(e+fx)\,\text{PolyLog}\left[3,e^{c+dx}\right]}{a\,d^3}+\frac{6\sqrt{a^2+b^2}\,f^2(e+fx)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a\,b\,d^3}-$$
$$\frac{6\sqrt{a^2+b^2}\,f^2(e+fx)\,\text{PolyLog}\left[3,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a\,b\,d^3}-\frac{6f^3\,\text{PolyLog}\left[4,-e^{c+dx}\right]}{a\,d^4}+\frac{6f^3\,\text{PolyLog}\left[4,e^{c+dx}\right]}{a\,d^4}-$$
$$\frac{6\sqrt{a^2+b^2}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a\,b\,d^4}+\frac{6\sqrt{a^2+b^2}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a\,b\,d^4}$$

Result (type 4, 1374 leaves):

$$\frac{x\left(4 e^3+6 e^2 f x+4 e f^2 x^2+f^3 x^3\right)}{4 b}+$$

$$\frac{1}{a d^4}\left(-2 d^3 e^3 \text{ArcTanh}\left[e^{c+d x}\right]+3 d^3 e^2 f x \text{Log}\left[1-e^{c+d x}\right]+3 d^3 e f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+\right.$$
$$d^3 f^3 x^3 \text{Log}\left[1-e^{c+d x}\right]-3 d^3 e^2 f x \text{Log}\left[1+e^{c+d x}\right]-3 d^3 e f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-$$
$$d^3 f^3 x^3 \text{Log}\left[1+e^{c+d x}\right]-3 d^2 f (e+f x)^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+3 d^2 f (e+f x)^2 \text{PolyLog}\left[2, e^{c+d x}\right]+$$
$$6 d e f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+6 d f^3 x \text{PolyLog}\left[3,-e^{c+d x}\right]-6 d e f^2 \text{PolyLog}\left[3, e^{c+d x}\right]-$$
$$\left.6 d f^3 x \text{PolyLog}\left[3, e^{c+d x}\right]-6 f^3 \text{PolyLog}\left[4,-e^{c+d x}\right]+6 f^3 \text{PolyLog}\left[4, e^{c+d x}\right]\right)+$$

$$\frac{1}{a b d^4 \sqrt{\left(a^2+b^2\right) e^{2 c}}} \sqrt{-a^2-b^2}\left(2 d^3 e^3 \sqrt{\left(a^2+b^2\right) e^{2 c}} \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]+\right.$$
$$3 \sqrt{-a^2-b^2} d^3 e^2 e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+3 \sqrt{-a^2-b^2} d^3 e e^c f^2 x^2$$
$$\text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+\sqrt{-a^2-b^2} d^3 e^c f^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$3 \sqrt{-a^2-b^2} d^3 e^2 e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 \sqrt{-a^2-b^2} d^3 e e^c f^2 x^2$$
$$\text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-\sqrt{-a^2-b^2} d^3 e^c f^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$3 \sqrt{-a^2-b^2} d^2 e^c f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$3 \sqrt{-a^2-b^2} d^2 e^c f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 \sqrt{-a^2-b^2} d e e^c f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 \sqrt{-a^2-b^2} d e^c f^3 x \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$6 \sqrt{-a^2-b^2} d e e^c f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$6 \sqrt{-a^2-b^2} d e^c f^3 x \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 \sqrt{-a^2-b^2} e^c f^3$$
$$\left.\text{PolyLog}\left[4,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 \sqrt{-a^2-b^2} e^c f^3 \text{PolyLog}\left[4,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\right)$$

Problem 430: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Cosh}[c+d x]^2 \operatorname{Coth}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 656 leaves, 34 steps):

$$-\frac{(e+f x)^4}{4 a f}+\frac{\left(a^2+b^2\right)(e+f x)^4}{4 a b^2 f}-\frac{6 f^3 \operatorname{Cosh}[c+d x]}{b d^4}-\frac{3 f (e+f x)^2 \operatorname{Cosh}[c+d x]}{b d^2}-\frac{\left(a^2+b^2\right)(e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d}-\frac{\left(a^2+b^2\right)(e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d}+\frac{(e+f x)^3 \operatorname{Log}\left[1-e^{2(c+d x)}\right]}{a d}-\frac{3\left(a^2+b^2\right) f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d^2}-\frac{3\left(a^2+b^2\right) f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d^2}+\frac{3 f (e+f x)^2 \operatorname{PolyLog}\left[2, e^{2(c+d x)}\right]}{2 a d^2}+\frac{6\left(a^2+b^2\right) f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d^3}+\frac{6\left(a^2+b^2\right) f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d^3}-\frac{3 f^2 (e+f x) \operatorname{PolyLog}\left[3, e^{2(c+d x)}\right]}{2 a d^3}-\frac{6\left(a^2+b^2\right) f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d^4}-\frac{6\left(a^2+b^2\right) f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d^4}+\frac{3 f^3 \operatorname{PolyLog}\left[4, e^{2(c+d x)}\right]}{4 a d^4}+\frac{6 f^2 (e+f x) \operatorname{Sinh}[c+d x]}{b d^3}+\frac{(e+f x)^3 \operatorname{Sinh}[c+d x]}{b d}$$

Result (type 4, 3073 leaves):

$$-\frac{1}{4 a d^4\left(-1+e^{2 c}\right)}\Big(8 d^4 e^3 e^{2 c} x+12 d^4 e^2 e^{2 c} f x^2+8 d^4 e e^{2 c} f^2 x^3+2 d^4 e^{2 c} f^3 x^4+4 d^3 e^3 \operatorname{Log}\left[1-e^{2(c+d x)}\right]-4 d^3 e^3 e^{2 c} \operatorname{Log}\left[1-e^{2(c+d x)}\right]+12 d^3 e^2 f x \operatorname{Log}\left[1-e^{2(c+d x)}\right]-12 d^3 e^2 e^{2 c} f x \operatorname{Log}\left[1-e^{2(c+d x)}\right]+12 d^3 e f^2 x^2 \operatorname{Log}\left[1-e^{2(c+d x)}\right]-12 d^3 e e^{2 c} f^2 x^2 \operatorname{Log}\left[1-e^{2(c+d x)}\right]+4 d^3 f^3 x^3 \operatorname{Log}\left[1-e^{2(c+d x)}\right]-4 d^3 e^{2 c} f^3 x^3 \operatorname{Log}\left[1-e^{2(c+d x)}\right]-6 d^2\left(-1+e^{2 c}\right) f (e+f x)^2 \operatorname{PolyLog}\left[2, e^{2(c+d x)}\right]+6 d\left(-1+e^{2 c}\right) f^2 (e+f x) \operatorname{PolyLog}\left[3, e^{2(c+d x)}\right]+3 f^3 \operatorname{PolyLog}\left[4, e^{2(c+d x)}\right]-3 e^{2 c} f^3 \operatorname{PolyLog}\left[4, e^{2(c+d x)}\right]\Big)+$$

$$\frac{1}{2 a b^2 d^4\left(-1+e^{2 c}\right)}\left(a^2+b^2\right)\Big(4 d^4 e^3 e^{2 c} x+6 d^4 e^2 e^{2 c} f x^2+4 d^4 e e^{2 c} f^2 x^3+d^4 e^{2 c} f^3 x^4+2 d^3 e^3 \operatorname{Log}\left[2 a e^{c+d x}+b\left(-1+e^{2(c+d x)}\right)\right]-2 d^3 e^3 e^{2 c} \operatorname{Log}\left[2 a e^{c+d x}+b\left(-1+e^{2(c+d x)}\right)\right]+$$

$$6\,d^3\,e^2\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$2\,d^3\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$6\,d^3\,e^2\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$2\,d^3\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\Big[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\Big[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\Big[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-$$

$$12\,d\,e\,f^2\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+12\,d\,e\,e^{2\,c}\,f^2$$

$$\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,d\,f^3\,x\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+12\,d$$

$$e^{2\,c}\,f^3\,x\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,d\,e\,f^2\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,d\,f^3\,x$$

$$\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\Big[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$12\,f^3\,\text{PolyLog}\Big[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\Big[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]+$$

$$12\,f^3\,\text{PolyLog}\Big[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\Big[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2\,c}}}\Big]\Bigg)+$$

$$\text{Csch}[c]\,\left(\frac{\text{Cosh}[c+d\,x]}{8\,b^2\,d^4}-\frac{\text{Sinh}[c+d\,x]}{8\,b^2\,d^4}\right)\,\big(-4\,a\,d^4\,e^3\,x\,\text{Cosh}[d\,x]-6\,a\,d^4\,e^2\,f\,x^2\,\text{Cosh}[d\,x]-$$

$$4\,a\,d^4\,e\,f^2\,x^3\,\text{Cosh}[d\,x]-a\,d^4\,f^3\,x^4\,\text{Cosh}[d\,x]-4\,a\,d^4\,e^3\,x\,\text{Cosh}[2\,c+d\,x]-$$

$$6\,a\,d^4\,e^2\,f\,x^2\,\text{Cosh}[2\,c+d\,x]-4\,a\,d^4\,e\,f^2\,x^3\,\text{Cosh}[2\,c+d\,x]-a\,d^4\,f^3\,x^4\,\text{Cosh}[2\,c+d\,x]-$$

$$\begin{aligned}
&2 b d^3 e^3 \text{Cosh}[c+2 d x]+6 b d^2 e^2 f \text{Cosh}[c+2 d x]-12 b d e f^2 \text{Cosh}[c+2 d x]+\\
&12 b f^3 \text{Cosh}[c+2 d x]-6 b d^3 e^2 f x \text{Cosh}[c+2 d x]+12 b d^2 e f^2 x \text{Cosh}[c+2 d x]-\\
&12 b d f^3 x \text{Cosh}[c+2 d x]-6 b d^3 e f^2 x^2 \text{Cosh}[c+2 d x]+6 b d^2 f^3 x^2 \text{Cosh}[c+2 d x]-\\
&2 b d^3 f^3 x^3 \text{Cosh}[c+2 d x]+2 b d^3 e^3 \text{Cosh}[3 c+2 d x]-6 b d^2 e^2 f \text{Cosh}[3 c+2 d x]+\\
&12 b d e f^2 \text{Cosh}[3 c+2 d x]-12 b f^3 \text{Cosh}[3 c+2 d x]+6 b d^3 e^2 f x \text{Cosh}[3 c+2 d x]-\\
&12 b d^2 e f^2 x \text{Cosh}[3 c+2 d x]+12 b d f^3 x \text{Cosh}[3 c+2 d x]+6 b d^3 e f^2 x^2 \text{Cosh}[3 c+2 d x]-\\
&6 b d^2 f^3 x^2 \text{Cosh}[3 c+2 d x]+2 b d^3 f^3 x^3 \text{Cosh}[3 c+2 d x]-4 b d^3 e^3 \text{Sinh}[c]-\\
&12 b d^2 e^2 f \text{Sinh}[c]-24 b d e f^2 \text{Sinh}[c]-24 b f^3 \text{Sinh}[c]-12 b d^3 e^2 f x \text{Sinh}[c]-\\
&24 b d^2 e f^2 x \text{Sinh}[c]-24 b d f^3 x \text{Sinh}[c]-12 b d^3 e f^2 x^2 \text{Sinh}[c]-\\
&12 b d^2 f^3 x^2 \text{Sinh}[c]-4 b d^3 f^3 x^3 \text{Sinh}[c]-4 a d^4 e^3 x \text{Sinh}[d x]-\\
&6 a d^4 e^2 f x^2 \text{Sinh}[d x]-4 a d^4 e f^2 x^3 \text{Sinh}[d x]-a d^4 f^3 x^4 \text{Sinh}[d x]-\\
&4 a d^4 e^3 x \text{Sinh}[2 c+d x]-6 a d^4 e^2 f x^2 \text{Sinh}[2 c+d x]-4 a d^4 e f^2 x^3 \text{Sinh}[2 c+d x]-\\
&a d^4 f^3 x^4 \text{Sinh}[2 c+d x]-2 b d^3 e^3 \text{Sinh}[c+2 d x]+6 b d^2 e^2 f \text{Sinh}[c+2 d x]-\\
&12 b d e f^2 \text{Sinh}[c+2 d x]+12 b f^3 \text{Sinh}[c+2 d x]-6 b d^3 e^2 f x \text{Sinh}[c+2 d x]+\\
&12 b d^2 e f^2 x \text{Sinh}[c+2 d x]-12 b d f^3 x \text{Sinh}[c+2 d x]-6 b d^3 e f^2 x^2 \text{Sinh}[c+2 d x]+\\
&6 b d^2 f^3 x^2 \text{Sinh}[c+2 d x]-2 b d^3 f^3 x^3 \text{Sinh}[c+2 d x]+2 b d^3 e^3 \text{Sinh}[3 c+2 d x]-\\
&6 b d^2 e^2 f \text{Sinh}[3 c+2 d x]+12 b d e f^2 \text{Sinh}[3 c+2 d x]-12 b f^3 \text{Sinh}[3 c+2 d x]+\\
&6 b d^3 e^2 f x \text{Sinh}[3 c+2 d x]-12 b d^2 e f^2 x \text{Sinh}[3 c+2 d x]+12 b d f^3 x \text{Sinh}[3 c+2 d x]+\\
&6 b d^3 e f^2 x^2 \text{Sinh}[3 c+2 d x]-6 b d^2 f^3 x^2 \text{Sinh}[3 c+2 d x]+2 b d^3 f^3 x^3 \text{Sinh}[3 c+2 d x]\Big)
\end{aligned}$$

Problem 431: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \text{Cosh}[c+d x]^2 \text{Coth}[c+d x]}{a+b \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 486 leaves, 26 steps):

$$\begin{aligned}
&-\frac{(e+f x)^3}{3 a f}+\frac{(a^2+b^2)(e+f x)^3}{3 a b^2 f}-\frac{2 f (e+f x) \text{Cosh}[c+d x]}{b d^2}-\\
&\frac{(a^2+b^2)(e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d}-\frac{(a^2+b^2)(e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d}+\\
&\frac{(e+f x)^2 \text{Log}\left[1-e^{2(c+d x)}\right]}{a d}-\frac{2 (a^2+b^2) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d^2}-\\
&\frac{2 (a^2+b^2) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d^2}+\frac{f (e+f x) \text{PolyLog}\left[2,e^{2(c+d x)}\right]}{a d^2}+\\
&\frac{2 (a^2+b^2) f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d^3}+\frac{2 (a^2+b^2) f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d^3}-\\
&\frac{f^2 \text{PolyLog}\left[3,e^{2(c+d x)}\right]}{2 a d^3}+\frac{2 f^2 \text{Sinh}[c+d x]}{b d^3}+\frac{(e+f x)^2 \text{Sinh}[c+d x]}{b d}
\end{aligned}$$

Result (type 4, 1089 leaves):

$$\frac{1}{6}\left(-\frac{2\,a\,x\,\left(3\,e^2+3\,e\,f\,x+f^2\,x^2\right)\,\mathrm{Coth}[c]}{b^2}+\frac{1}{a}\right.$$
$$\left(-\frac{4\,\mathbb{e}^{2\,c}\,x\,\left(3\,e^2+3\,e\,f\,x+f^2\,x^2\right)}{-1+\mathbb{e}^{2\,c}}+\frac{6\,\left(e+f\,x\right)^2\,\mathrm{Log}\left[1-\mathbb{e}^{2\,(c+d\,x)}\right]}{d}+\right.$$
$$\left.\frac{6\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,\mathbb{e}^{2\,(c+d\,x)}\right]}{d^2}-\frac{3\,f^2\,\mathrm{PolyLog}\left[3,\,\mathbb{e}^{2\,(c+d\,x)}\right]}{d^3}\right)+$$
$$\frac{1}{a\,b^2\,d^3\,\left(-1+\mathbb{e}^{2\,c}\right)}\,2\,\left(a^2+b^2\right)\,\left(6\,d^3\,e^2\,\mathbb{e}^{2\,c}\,x+6\,d^3\,e\,\mathbb{e}^{2\,c}\,f\,x^2+2\,d^3\,\mathbb{e}^{2\,c}\,f^2\,x^3+\right.$$
$$3\,d^2\,e^2\,\mathrm{Log}\left[2\,a\,\mathbb{e}^{c+d\,x}+b\,\left(-1+\mathbb{e}^{2\,(c+d\,x)}\right)\right]-3\,d^2\,e^2\,\mathbb{e}^{2\,c}\,\mathrm{Log}\left[2\,a\,\mathbb{e}^{c+d\,x}+b\,\left(-1+\mathbb{e}^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-6\,d^2\,e\,\mathbb{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-3\,d^2\,\mathbb{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+$$
$$6\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-6\,d^2\,e\,\mathbb{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-3\,d^2\,\mathbb{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+\mathbb{e}^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+\mathbb{e}^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-$$
$$6\,f^2\,\mathrm{PolyLog}\left[3,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+6\,\mathbb{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c-\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]-$$
$$\left.6\,f^2\,\mathrm{PolyLog}\left[3,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]+6\,\mathbb{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-\frac{b\,\mathbb{e}^{2\,c+d\,x}}{a\,\mathbb{e}^c+\sqrt{\left(a^2+b^2\right)\,\mathbb{e}^{2\,c}}}\right]\right)+$$
$$\frac{1}{b\,d^3}6\,\mathrm{Cosh}[d\,x]\,\left(-2\,d\,f\,\left(e+f\,x\right)\,\mathrm{Cosh}[c]+\left(2\,f^2+d^2\,\left(e+f\,x\right)^2\right)\,\mathrm{Sinh}[c]\right)+$$
$$\frac{1}{b\,d^3}$$
$$\left.6\,\left(\left(2\,f^2+d^2\,\left(e+f\,x\right)^2\right)\,\mathrm{Cosh}[c]-2\,d\,f\,\left(e+f\,x\right)\,\mathrm{Sinh}[c]\right)\,\mathrm{Sinh}[d\,x]\right)$$

Problem 432: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)\, \text{Cosh}[c+d x]^2\, \text{Coth}[c+d x]}{a+b\, \text{Sinh}[c+d x]}\, dx$$

Optimal (type 4, 322 leaves, 22 steps):

$$-\frac{(e+f x)^2}{2 a f}+\frac{\left(a^2+b^2\right) (e+f x)^2}{2 a b^2 f}-\frac{f\, \text{Cosh}[c+d x]}{b d^2}-\frac{\left(a^2+b^2\right) (e+f x)\, \text{Log}\left[1+\frac{b\, e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d}-\frac{\left(a^2+b^2\right) (e+f x)\, \text{Log}\left[1+\frac{b\, e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d}+\frac{(e+f x)\, \text{Log}\left[1-e^{2 (c+d x)}\right]}{a d}-\frac{\left(a^2+b^2\right) f\, \text{PolyLog}\left[2,-\frac{b\, e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a b^2 d^2}-\frac{\left(a^2+b^2\right) f\, \text{PolyLog}\left[2,-\frac{b\, e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a b^2 d^2}+\frac{f\, \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{2 a d^2}+\frac{(e+f x)\, \text{Sinh}[c+d x]}{b d}$$

Result (type 4, 794 leaves):

$$-\frac{1}{a b^2 d^2}\Bigg(a b f\, \text{Cosh}[c+d x]-b^2 d e\, \text{Log}[\text{Sinh}[c+d x]]+$$

$$b^2 c f\, \text{Log}[\text{Sinh}[c+d x]]+a^2 d e\, \text{Log}\left[1+\frac{b\, \text{Sinh}[c+d x]}{a}\right]+b^2 d e\, \text{Log}\left[1+\frac{b\, \text{Sinh}[c+d x]}{a}\right]-$$

$$a^2 c f\, \text{Log}\left[1+\frac{b\, \text{Sinh}[c+d x]}{a}\right]-b^2 c f\, \text{Log}\left[1+\frac{b\, \text{Sinh}[c+d x]}{a}\right]-$$

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

$$\Bigg(-\frac{1}{8} (2 c+i \pi+2 d x)^2-4\, \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b)\, \text{Cot}\left[\frac{1}{4} (2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]+$$

$$\frac{1}{2}\left(2 c+i \pi+2 d x+4 i\, \text{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right]\right) \text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

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

$$\left(-\frac{1}{8}\left(2\,c+i\,\pi+2\,d\,x\right)^2-4\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a+i\,b)\,\text{Cot}\left[\frac{1}{4}\left(2\,i\,c+\pi+2\,i\,d\,x\right)\right]}{\sqrt{a^2+b^2}}\right]+\right.$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x+4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

$$\frac{1}{2}\left(2\,c+i\,\pi+2\,d\,x-4\,i\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]-$$

$$\frac{1}{2}\,i\,\pi\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+\text{PolyLog}\left[2,\frac{\left(a-\sqrt{a^2+b^2}\right)e^{c+d\,x}}{b}\right]+$$

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

Problem 434: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Cosh}[c+d\,x]^2\,\text{Coth}[c+d\,x]}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]^2\,\text{Coth}[c+d\,x]}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 435: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1049 leaves, 40 steps):

$$-\frac{2 b (e+f x)^3 \text{ArcTan}\left[e^{c+d x}\right]}{\left(a^2+b^2\right) d}-\frac{2 (e+f x)^3 \text{ArcTanh}\left[e^{2 c+2 d x}\right]}{a d}-\frac{b^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d}-\frac{b^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d}+\frac{b^2 (e+f x)^3 \text{Log}\left[1+e^{2 (c+d x)}\right]}{a \left(a^2+b^2\right) d}+\frac{3 i b f (e+f x)^2 \text{PolyLog}\left[2,-i e^{c+d x}\right]}{\left(a^2+b^2\right) d^2}-\frac{3 i b f (e+f x)^2 \text{PolyLog}\left[2,i e^{c+d x}\right]}{\left(a^2+b^2\right) d^2}-\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d^2}-\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d^2}+\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{2 a \left(a^2+b^2\right) d^2}-\frac{3 f (e+f x)^2 \text{PolyLog}\left[2,-e^{2 c+2 d x}\right]}{2 a d^2}+\frac{3 f (e+f x)^2 \text{PolyLog}\left[2,e^{2 c+2 d x}\right]}{2 a d^2}-\frac{6 i b f^2 (e+f x) \text{PolyLog}\left[3,-i e^{c+d x}\right]}{\left(a^2+b^2\right) d^3}+\frac{6 i b f^2 (e+f x) \text{PolyLog}\left[3,i e^{c+d x}\right]}{\left(a^2+b^2\right) d^3}+\frac{6 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d^3}+\frac{6 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d^3}-\frac{3 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]}{2 a \left(a^2+b^2\right) d^3}+\frac{3 f^2 (e+f x) \text{PolyLog}\left[3,-e^{2 c+2 d x}\right]}{2 a d^3}-\frac{3 f^2 (e+f x) \text{PolyLog}\left[3,e^{2 c+2 d x}\right]}{2 a d^3}+\frac{6 i b f^3 \text{PolyLog}\left[4,-i e^{c+d x}\right]}{\left(a^2+b^2\right) d^4}-\frac{6 i b f^3 \text{PolyLog}\left[4,i e^{c+d x}\right]}{\left(a^2+b^2\right) d^4}-\frac{6 b^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d^4}-\frac{6 b^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right) d^4}+\frac{3 b^2 f^3 \text{PolyLog}\left[4,-e^{2 (c+d x)}\right]}{4 a \left(a^2+b^2\right) d^4}-\frac{3 f^3 \text{PolyLog}\left[4,-e^{2 c+2 d x}\right]}{4 a d^4}+\frac{3 f^3 \text{PolyLog}\left[4,e^{2 c+2 d x}\right]}{4 a d^4}$$

Result (type 4, 2535 leaves):

$$-\frac{1}{4 a \left(a^2+b^2\right) d^4}\Bigg(-4 i a^2 d^3 e^3 \text{ArcTan}\left[e^{c+d x}\right]+8 a b d^3 e^3 \text{ArcTan}\left[e^{c+d x}\right]-$$
$$4 a^2 d^3 e^3 \text{Log}\left[1-e^{c+d x}\right]-12 a^2 d^3 e^2 f x \text{Log}\left[1-e^{c+d x}\right]-12 a^2 d^3 e f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-$$
$$4 a^2 d^3 f^3 x^3 \text{Log}\left[1-e^{c+d x}\right]+12 a^2 d^3 e^2 f x \text{Log}\left[1-i e^{c+d x}\right]+12 i a b d^3 e^2 f x \text{Log}\left[1-i e^{c+d x}\right]+$$
$$12 a^2 d^3 e f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]+12 i a b d^3 e f^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]+4 a^2 d^3 f^3 x^3 \text{Log}\left[1-i e^{c+d x}\right]+$$
$$4 i a b d^3 f^3 x^3 \text{Log}\left[1-i e^{c+d x}\right]+4 a^2 d^3 e^3 \text{Log}\left[1+i e^{c+d x}\right]+12 a^2 d^3 e^2 f x \text{Log}\left[1+i e^{c+d x}\right]-$$
$$12 i a b d^3 e^2 f x \text{Log}\left[1+i e^{c+d x}\right]+12 a^2 d^3 e f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]-$$
$$12 i a b d^3 e f^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]+4 a^2 d^3 f^3 x^3 \text{Log}\left[1+i e^{c+d x}\right]-4 i a b d^3 f^3 x^3 \text{Log}\left[1+i e^{c+d x}\right]-$$
$$4 a^2 d^3 e^3 \text{Log}\left[1+e^{c+d x}\right]-12 a^2 d^3 e^2 f x \text{Log}\left[1+e^{c+d x}\right]-12 a^2 d^3 e f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-$$

$$4 a^2 d^3 f^3 x^3 \text{Log}\left[1+e^{c+d x}\right]-4 b^2 d^3 e^3 \text{Log}\left[1-e^{2 (c+d x)}\right]-12 b^2 d^3 e^2 f x \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 b^2 d^3 e f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-4 b^2 d^3 f^3 x^3 \text{Log}\left[1-e^{2 (c+d x)}\right]+2 a^2 d^3 e^3 \text{Log}\left[1+e^{2 (c+d x)}\right]+$$
$$4 b^2 d^3 e^3 \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]+12 b^2 d^3 e^2 f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$12 b^2 d^3 e f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+4 b^2 d^3 f^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$12 b^2 d^3 e^2 f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+12 b^2 d^3 e f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$4 b^2 d^3 f^3 x^3 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-12 a^2 d^2 f (e+f x)^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+$$
$$12 a (a-i b) d^2 f (e+f x)^2 \text{PolyLog}\left[2,-i e^{c+d x}\right]+12 a^2 d^2 e^2 f \text{PolyLog}\left[2,i e^{c+d x}\right]+$$
$$12 i a b d^2 e^2 f \text{PolyLog}\left[2,i e^{c+d x}\right]+24 a^2 d^2 e f^2 x \text{PolyLog}\left[2,i e^{c+d x}\right]+$$
$$24 i a b d^2 e f^2 x \text{PolyLog}\left[2,i e^{c+d x}\right]+12 a^2 d^2 f^3 x^2 \text{PolyLog}\left[2,i e^{c+d x}\right]+$$
$$12 i a b d^2 f^3 x^2 \text{PolyLog}\left[2,i e^{c+d x}\right]-12 a^2 d^2 e^2 f \text{PolyLog}\left[2,e^{c+d x}\right]-$$
$$24 a^2 d^2 e f^2 x \text{PolyLog}\left[2,e^{c+d x}\right]-12 a^2 d^2 f^3 x^2 \text{PolyLog}\left[2,e^{c+d x}\right]-$$
$$6 b^2 d^2 e^2 f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-12 b^2 d^2 e f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$6 b^2 d^2 f^3 x^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+12 b^2 d^2 e^2 f \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$24 b^2 d^2 e f^2 x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$12 b^2 d^2 f^3 x^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+12 b^2 d^2 e^2 f$$
$$\text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+24 b^2 d^2 e f^2 x \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+$$
$$12 b^2 d^2 f^3 x^2 \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+24 a^2 d e f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+$$
$$24 a^2 d f^3 x \text{PolyLog}\left[3,-e^{c+d x}\right]-24 a^2 d e f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]+$$
$$24 i a b d e f^2 \text{PolyLog}\left[3,-i e^{c+d x}\right]-24 a^2 d f^3 x \text{PolyLog}\left[3,-i e^{c+d x}\right]+$$
$$24 i a b d f^3 x \text{PolyLog}\left[3,-i e^{c+d x}\right]-24 a^2 d e f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]-$$
$$24 i a b d e f^2 \text{PolyLog}\left[3,i e^{c+d x}\right]-24 a^2 d f^3 x \text{PolyLog}\left[3,i e^{c+d x}\right]-$$
$$24 i a b d f^3 x \text{PolyLog}\left[3,i e^{c+d x}\right]+24 a^2 d e f^2 \text{PolyLog}\left[3,e^{c+d x}\right]+$$
$$24 a^2 d f^3 x \text{PolyLog}\left[3,e^{c+d x}\right]+6 b^2 d e f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]+$$
$$6 b^2 d f^3 x \text{PolyLog}\left[3,e^{2 (c+d x)}\right]-24 b^2 d e f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$24 b^2 d f^3 x \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$

$$24\,b^2\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$24\,b^2\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-24\,a^2\,f^3\,\text{PolyLog}\left[4,\,-e^{c+d\,x}\right]+$$
$$24\,a^2\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]-24\,i\,a\,b\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]+24\,a^2\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]+$$
$$24\,i\,a\,b\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]-24\,a^2\,f^3\,\text{PolyLog}\left[4,\,e^{c+d\,x}\right]-3\,b^2\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]+$$
$$\left.24\,b^2\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+24\,b^2\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\right)$$

Problem 436: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 734 leaves, 33 steps):

$$-\frac{2\,b\,(e+f\,x)^2\,\text{ArcTan}\left[e^{c+d\,x}\right]}{\left(a^2+b^2\right)\,d}-\frac{2\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{2\,c+2\,d\,x}\right]}{a\,d}-$$
$$\frac{b^2\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)\,d}-\frac{b^2\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)\,d}+\frac{b^2\,(e+f\,x)^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]}{a\,\left(a^2+b^2\right)\,d}+$$
$$\frac{2\,i\,b\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{\left(a^2+b^2\right)\,d^2}-\frac{2\,i\,b\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,i\,e^{c+d\,x}\right]}{\left(a^2+b^2\right)\,d^2}-$$
$$\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)\,d^2}-\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)\,d^2}+$$
$$\frac{b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]}{a\,\left(a^2+b^2\right)\,d^2}-\frac{f\,(e+f\,x)\,\text{PolyLog}\left[2,\,-e^{2\,c+2\,d\,x}\right]}{a\,d^2}+$$
$$\frac{f\,(e+f\,x)\,\text{PolyLog}\left[2,\,e^{2\,c+2\,d\,x}\right]}{a\,d^2}-\frac{2\,i\,b\,f^2\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]}{\left(a^2+b^2\right)\,d^3}+$$
$$\frac{2\,i\,b\,f^2\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]}{\left(a^2+b^2\right)\,d^3}+\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)\,d^3}+\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)\,d^3}-$$
$$\frac{b^2\,f^2\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]}{2\,a\,\left(a^2+b^2\right)\,d^3}+\frac{f^2\,\text{PolyLog}\left[3,\,-e^{2\,c+2\,d\,x}\right]}{2\,a\,d^3}-\frac{f^2\,\text{PolyLog}\left[3,\,e^{2\,c+2\,d\,x}\right]}{2\,a\,d^3}$$

Result (type 4, 3426 leaves):

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

$$6\,d\,\left(1+e^{c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]-6\,\left(1+e^{c}\right)\,f^{2}\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]\Big)\Big)\Big/$$

$$\left(6\,\left(a^{2}+b^{2}\right)\,d^{3}\,\left(1+e^{c}\right)\right)+\Big(d^{2}\,\Big(-i\,d\,e^{c}\,x\,\left(-3\,i\,b\,e\,f\,x+a\,\left(3\,e^{2}+3\,e\,f\,x+f^{2}\,x^{2}\right)\right)+$$

$$3\,\left(1+i\,e^{c}\right)\,\left(-2\,i\,b\,e\,f\,x+a\,\left(e+f\,x\right)^{2}\right)\,\text{Log}\left[1+i\,e^{c+d\,x}\right]\Big)+6\,d\,\left(1+i\,e^{c}\right)\,f$$

$$\left(-i\,b\,e+a\,\left(e+f\,x\right)\right)\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]-6\,i\,a\,\left(-i+e^{c}\right)\,f^{2}\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]\Big)\Big/$$

$$\left(6\,\left(a-i\,b\right)\,\left(-i\,a+b\right)\,d^{3}\,\left(-i+e^{c}\right)\right)-\frac{1}{2\,\left(a^{2}+b^{2}\right)\,d^{3}}$$

$$i\,b\,\Big(-2\,i\,d^{2}\,e^{2}\,\text{ArcTan}\left[e^{c+d\,x}\right]+d^{2}\,f^{2}\,x^{2}\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-d^{2}\,f^{2}\,x^{2}\,\text{Log}\left[1+i\,e^{c+d\,x}\right]-$$

$$2\,d\,f^{2}\,x\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]+2\,d\,f^{2}\,x\,\text{PolyLog}\left[2,\,i\,e^{c+d\,x}\right]+$$

$$2\,f^{2}\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]-2\,f^{2}\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]\Big)+$$

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

$$2\,i\,a\,d^{2}\,e^{2}\,e^{2\,c}\,\text{ArcTan}\left[e^{c+d\,x}\right]-2\,i\,a\,d^{2}\,e^{2}\,\text{Log}\left[1-e^{c+d\,x}\right]+2\,a\,d^{2}\,e^{2}\,e^{2\,c}\,\text{Log}\left[1-e^{c+d\,x}\right]-$$

$$4\,i\,a\,d^{2}\,e\,f\,x\,\text{Log}\left[1-e^{c+d\,x}\right]+4\,a\,d^{2}\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1-e^{c+d\,x}\right]-2\,i\,a\,d^{2}\,f^{2}\,x^{2}\,\text{Log}\left[1-e^{c+d\,x}\right]+$$

$$2\,a\,d^{2}\,e^{2\,c}\,f^{2}\,x^{2}\,\text{Log}\left[1-e^{c+d\,x}\right]+4\,i\,a\,d^{2}\,e\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-4\,b\,d^{2}\,e\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-$$

$$4\,a\,d^{2}\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-4\,i\,b\,d^{2}\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+$$

$$2\,i\,a\,d^{2}\,f^{2}\,x^{2}\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-2\,a\,d^{2}\,e^{2\,c}\,f^{2}\,x^{2}\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+i\,a\,d^{2}\,e^{2}\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-$$

$$a\,d^{2}\,e^{2}\,e^{2\,c}\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]-4\,d\,\left(-i+e^{2\,c}\right)\,f\,\left(i\,b\,e+a\,\left(e+f\,x\right)\right)\,\text{PolyLog}\left[2,\,i\,e^{c+d\,x}\right]+$$

$$4\,a\,d\,\left(-i+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]-4\,i\,a\,f^{2}\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]+$$

$$4\,a\,e^{2\,c}\,f^{2}\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]+4\,i\,a\,f^{2}\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-4\,a\,e^{2\,c}\,f^{2}\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]\Big)-$$

$$\Big(b^{2}\,\Big(4\,d^{3}\,e^{2\,c}\,x\,\left(3\,e^{2}+3\,e\,f\,x+f^{2}\,x^{2}\right)-6\,d^{2}\,\left(-1+e^{2\,c}\right)\,\left(e+f\,x\right)^{2}\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$

$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+3\,\left(-1+e^{2\,c}\right)\,f^{2}\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]\Big)\Big)\Big/$$

$$\left(12\,a\,\left(a^{2}+b^{2}\right)\,d^{3}\,\left(-1+e^{2\,c}\right)\right)+\frac{1}{6\,a\,\left(a^{2}+b^{2}\right)\,d^{3}\,\left(-1+e^{2\,c}\right)}$$

$$b^{2}\,\Bigg(6\,d^{3}\,e^{2}\,e^{2\,c}\,x+6\,d^{3}\,e\,e^{2\,c}\,f\,x^{2}+2\,d^{3}\,e^{2\,c}\,f^{2}\,x^{3}+$$

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

$$6\,d^{2}\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^{2}+b^{2}\right)\,e^{2\,c}}}\right]-6\,d^{2}\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^{2}+b^{2}\right)\,e^{2\,c}}}\right]+$$

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

$$6\,d^{2}\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)\,e^{2\,c}}}\right]-6\,d^{2}\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)\,e^{2\,c}}}\right]+$$

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

$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^{2}+b^{2}\right)\,e^{2\,c}}}\right]-$$

$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^{2}+b^{2}\right)\,e^{2\,c}}}\right]-$$

$$6 f^2 \text{PolyLog}\left[3, -\frac{b e^{2c+dx}}{a e^c - \sqrt{(a^2+b^2) e^{2c}}}\right] + 6 e^{2c} f^2 \text{PolyLog}\left[3, -\frac{b e^{2c+dx}}{a e^c - \sqrt{(a^2+b^2) e^{2c}}}\right] -$$

$$6 f^2 \text{PolyLog}\left[3, -\frac{b e^{2c+dx}}{a e^c + \sqrt{(a^2+b^2) e^{2c}}}\right] + 6 e^{2c} f^2 \text{PolyLog}\left[3, -\frac{b e^{2c+dx}}{a e^c + \sqrt{(a^2+b^2) e^{2c}}}\right]\Bigg) -$$

$$\frac{b^2 x \left(3 e^2 + 3 e f x + f^2 x^2\right) \text{Csch}\left[\frac{c}{2}\right] \text{Sech}\left[\frac{c}{2}\right] \text{Sech}[c]}{24 a \left(a^2+b^2\right)} +$$

$$\frac{x \text{Csch}\left[\frac{c}{2}\right] \text{Sech}\left[\frac{c}{2}\right] \left(a^2 e^2 + b^2 e^2 - a^2 e^2 \text{Cosh}[c] - i a^2 e^2 \text{Sinh}[c]\right)}{8 a \left(a^2+b^2\right) \left(\text{Cosh}\left[\frac{c}{2}\right] - i \text{Sinh}\left[\frac{c}{2}\right]\right) \left(\text{Cosh}\left[\frac{c}{2}\right] + i \text{Sinh}\left[\frac{c}{2}\right]\right)} +$$

$$\left(b^2 e f x^2 \text{Cosh}[2c]\right) \Big/ \left(a \left(a^2+b^2\right) \left(-1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right) \left(1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right)\right) +$$

$$\left(b^2 f^2 x^3 \text{Cosh}[2c]\right) \Big/ \left(3 a \left(a^2+b^2\right) \left(-1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right) \left(1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right)\right) +$$

$$\left(b^2 e f x^2 \text{Sinh}[2c]\right) \Big/ \left(a \left(a^2+b^2\right) \left(-1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right) \left(1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right)\right) +$$

$$\left(b^2 f^2 x^3 \text{Sinh}[2c]\right) \Big/ \left(3 a \left(a^2+b^2\right) \left(-1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right) \left(1 + \text{Cosh}[2c] + \text{Sinh}[2c]\right)\right) -$$

$$\left(\left(\frac{1}{2} - \frac{i}{2}\right) a e f x^2 \text{Cosh}[c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) +$$

$$\left(b e f x^2 \text{Cosh}[c]\right) \Big/ \left(2 \left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(\left(\frac{1}{6} - \frac{i}{6}\right) a f^2 x^3 \text{Cosh}[c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(\left(\frac{1}{2} + \frac{i}{2}\right) a e f x^2 \text{Cosh}[3c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(b e f x^2 \text{Cosh}[3c]\right) \Big/ \left(2 \left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(\left(\frac{1}{6} + \frac{i}{6}\right) a f^2 x^3 \text{Cosh}[3c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(\left(\frac{1}{2} - \frac{i}{2}\right) a e f x^2 \text{Sinh}[c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) +$$

$$\left(b e f x^2 \text{Sinh}[c]\right) \Big/ \left(2 \left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(\left(\frac{1}{6} - \frac{i}{6}\right) a f^2 x^3 \text{Sinh}[c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(\left(\frac{1}{2} + \frac{i}{2}\right) a e f x^2 \text{Sinh}[3c]\right) \Big/ \left(\left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \text{Cosh}[4c] - (1+i) \text{Sinh}[c] - 2 i \text{Sinh}[2c] + (1-i) \text{Sinh}[3c] + \text{Sinh}[4c]\right)\right) -$$

$$\left(b e f x^2 \text{Sinh}[3c]\right) \Big/ \left(2 \left(a^2+b^2\right) \left(-1 - (1+i) \text{Cosh}[c] - 2 i \text{Cosh}[2c] + (1-i) \text{Cosh}[3c] + \right.\right.$$

$$\text{Cosh}[4 c] - (1 + i) \text{Sinh}[c] - 2 i \text{Sinh}[2 c] + (1 - i) \text{Sinh}[3 c] + \text{Sinh}[4 c])) -$$

$$\left(\left(\frac{1}{6} + \frac{i}{6}\right) a f^2 x^3 \text{Sinh}[3 c]\right) \Big/ \left((a^2 + b^2) \left(-1 - (1 + i) \text{Cosh}[c] - 2 i \text{Cosh}[2 c] + (1 - i)\right.\right.$$

$$\left.\left.\text{Cosh}[3 c] + \text{Cosh}[4 c] - (1 + i) \text{Sinh}[c] - 2 i \text{Sinh}[2 c] + (1 - i) \text{Sinh}[3 c] + \text{Sinh}[4 c]\right)\right)$$

Problem 437: Result more than twice size of optimal antiderivative.

$$\int \frac{(e + f x) \text{Csch}[c + d x] \text{Sech}[c + d x]}{a + b \text{Sinh}[c + d x]} \, dx$$

Optimal (type 4, 439 leaves, 26 steps):

$$-\frac{2 b (e + f x) \text{ArcTan}[e^{c+d x}]}{(a^2 + b^2) d} - \frac{2 (e + f x) \text{ArcTanh}[e^{2 c+2 d x}]}{a d} - \frac{b^2 (e + f x) \text{Log}\left[1 + \frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a (a^2 + b^2) d} -$$

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

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

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

Result (type 4, 1880 leaves):

$$\frac{1}{8 a (a^2 + b^2) d^2} \left(8 b^2 c^2 f - 8 i a^2 c f \pi + 4 a b c f \pi + 4 i b^2 c f \pi -\right.$$

$$b^2 f \pi^2 + 16 b^2 c d f x - 8 i a^2 d f \pi x + 4 a b d f \pi x + 4 i b^2 d f \pi x + 8 b^2 d^2 f x^2 +$$

$$32 b^2 f \text{ArcSin}\left[\frac{\sqrt{1 + \frac{i a}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a + i b) \text{Cot}\left[\frac{1}{4} (2 i c + \pi + 2 i d x)\right]}{\sqrt{a^2 + b^2}}\right] -$$

$$16 a^2 d e \text{ArcTanh}\left[1 - 2 i \text{Tanh}\left[\frac{1}{2} (c + d x)\right]\right] - 8 i a b d e \text{ArcTanh}\left[1 - 2 i \text{Tanh}\left[\frac{1}{2} (c + d x)\right]\right] -$$

$$8 b^2 d e \text{ArcTanh}\left[1 - 2 i \text{Tanh}\left[\frac{1}{2} (c + d x)\right]\right] + 16 a^2 c f \text{ArcTanh}\left[1 - 2 i \text{Tanh}\left[\frac{1}{2} (c + d x)\right]\right] +$$

$$8 i a b c f \text{ArcTanh}\left[1 - 2 i \text{Tanh}\left[\frac{1}{2} (c + d x)\right]\right] + 8 b^2 c f \text{ArcTanh}\left[1 - 2 i \text{Tanh}\left[\frac{1}{2} (c + d x)\right]\right] -$$

$$2 i a^2 f \pi \text{Log}[2] + a b f \pi \text{Log}[4] + 8 a^2 c f \text{Log}\left[1 - e^{-c-d x}\right] + 8 b^2 c f \text{Log}\left[1 - e^{-c-d x}\right] +$$

$$8 a^2 d f x \text{Log}\left[1 - e^{-c-d x}\right] + 8 b^2 d f x \text{Log}\left[1 - e^{-c-d x}\right] - 8 a^2 c f \text{Log}\left[1 - i e^{-c-d x}\right] +$$

$$8 i a b c f \text{Log}\left[1 - i e^{-c-d x}\right] + 4 i a^2 f \pi \text{Log}\left[1 - i e^{-c-d x}\right] + 4 a b f \pi \text{Log}\left[1 - i e^{-c-d x}\right] -$$

$$8\,a^2\,d\,f\,x\,\text{Log}\left[1-i\,e^{-c-d\,x}\right]+8\,i\,a\,b\,d\,f\,x\,\text{Log}\left[1-i\,e^{-c-d\,x}\right]-8\,a^2\,c\,f\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]-$$
$$8\,i\,a\,b\,c\,f\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]-4\,i\,a^2\,f\,\pi\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]+4\,a\,b\,f\,\pi\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]-$$
$$8\,a^2\,d\,f\,x\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]-8\,i\,a\,b\,d\,f\,x\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]+8\,a^2\,c\,f\,\text{Log}\left[1+e^{-c-d\,x}\right]+$$
$$8\,b^2\,c\,f\,\text{Log}\left[1+e^{-c-d\,x}\right]+8\,a^2\,d\,f\,x\,\text{Log}\left[1+e^{-c-d\,x}\right]+8\,b^2\,d\,f\,x\,\text{Log}\left[1+e^{-c-d\,x}\right]+$$
$$16\,i\,a^2\,f\,\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-8\,b^2\,c\,f\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$
$$4\,i\,b^2\,f\,\pi\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-8\,b^2\,d\,f\,x\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$
$$16\,i\,b^2\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$
$$8\,b^2\,c\,f\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-4\,i\,b^2\,f\,\pi\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]-$$
$$8\,b^2\,d\,f\,x\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+$$
$$16\,i\,b^2\,f\,\text{ArcSin}\left[\frac{\sqrt{1+\frac{i\,a}{b}}}{\sqrt{2}}\right]\,\text{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right)\,e^{c+d\,x}}{b}\right]+8\,a^2\,d\,e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]+$$
$$8\,b^2\,d\,e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-8\,a^2\,c\,f\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-$$
$$8\,b^2\,c\,f\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-16\,i\,a^2\,f\,\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-$$
$$4\,i\,a^2\,f\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,\left(\pi+2\,i\,\left(c+d\,x\right)\right)\right]\right]-4\,a\,b\,f\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{1}{4}\,\left(\pi+2\,i\,\left(c+d\,x\right)\right)\right]\right]+$$
$$4\,i\,a^2\,f\,\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-$$
$$4\,a\,b\,f\,\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-$$
$$8\,a^2\,d\,e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]+$$
$$8\,i\,a\,b\,d\,e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]+$$
$$8\,a^2\,c\,f\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-$$
$$8\,i\,a\,b\,c\,f\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,\left(c+d\,x\right)\right]\right]-$$
$$4\,i\,a\,b\,d\,e\,\text{Log}\left[-1+\text{Cosh}\left[c+d\,x\right]+i\,\text{Sinh}\left[c+d\,x\right]\right]+$$
$$4\,b^2\,d\,e\,\text{Log}\left[-1+\text{Cosh}\left[c+d\,x\right]+i\,\text{Sinh}\left[c+d\,x\right]\right]+$$
$$4\,i\,a\,b\,c\,f\,\text{Log}\left[-1+\text{Cosh}\left[c+d\,x\right]+i\,\text{Sinh}\left[c+d\,x\right]\right]-$$
$$4\,b^2\,c\,f\,\text{Log}\left[-1+\text{Cosh}\left[c+d\,x\right]+i\,\text{Sinh}\left[c+d\,x\right]\right]+4\,i\,b^2\,f\,\pi\,\text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]-$$
$$8\,b^2\,d\,e\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+d\,x\right]}{a}\right]+8\,b^2\,c\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+d\,x\right]}{a}\right]-$$
$$8\,\left(a^2+b^2\right)\,f\,\text{PolyLog}\left[2,-e^{-c-d\,x}\right]+8\,a\,\left(a+i\,b\right)\,f\,\text{PolyLog}\left[2,-i\,e^{-c-d\,x}\right]+$$

$$8 a^2 f \text{PolyLog}\left[2, i e^{-c-d x}\right] - 8 i a b f \text{PolyLog}\left[2, i e^{-c-d x}\right] - 8 a^2 f \text{PolyLog}\left[2, e^{-c-d x}\right] - 8 b^2 f \text{PolyLog}\left[2, e^{-c-d x}\right] - 8 b^2 f \text{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right] - 8 b^2 f \text{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]\Bigg)$$

Problem 442: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \text{Csch}[c+d x] \text{Sech}[c+d x]^2}{a+b \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 442 leaves, 26 steps):

$$-\frac{f \text{ArcTan}[\text{Sinh}[c+d x]]}{a d^2} + \frac{b^2 f \text{ArcTan}[\text{Sinh}[c+d x]]}{a \left(a^2+b^2\right) d^2} - \frac{2 f x \text{ArcTanh}\left[e^{c+d x}\right]}{a d} + \frac{f x \text{ArcTanh}[\text{Cosh}[c+d x]]}{a d} - \frac{(e+f x) \text{ArcTanh}[\text{Cosh}[c+d x]]}{a d} - \frac{b^3 (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right)^{3/2} d} + \frac{b^3 (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right)^{3/2} d} + \frac{b f \text{Log}[\text{Cosh}[c+d x]]}{\left(a^2+b^2\right) d^2} - \frac{f \text{PolyLog}\left[2, -e^{c+d x}\right]}{a d^2} + \frac{f \text{PolyLog}\left[2, e^{c+d x}\right]}{a d^2} - \frac{b^3 f \text{PolyLog}\left[2, -\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right)^{3/2} d^2} + \frac{b^3 f \text{PolyLog}\left[2, -\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right)^{3/2} d^2} + \frac{(e+f x) \text{Sech}[c+d x]}{a d} - \frac{b^2 (e+f x) \text{Sech}[c+d x]}{a \left(a^2+b^2\right) d} - \frac{b (e+f x) \text{Tanh}[c+d x]}{\left(a^2+b^2\right) d}$$

Result (type 4, 922 leaves):

$$4\left(-\frac{f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]\right]\text{Csch}[c+d\,x]\,(a+b\,\text{Sinh}[c+d\,x])}{4\,(a-i\,b)\,d^2\,(b+a\,\text{Csch}[c+d\,x])}-\right.$$
$$\frac{f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]\right]\text{Csch}[c+d\,x]\,(a+b\,\text{Sinh}[c+d\,x])}{4\,(a+i\,b)\,d^2\,(b+a\,\text{Csch}[c+d\,x])}-$$
$$\frac{i\,f\,\text{Csch}[c+d\,x]\,\text{Log}[\text{Cosh}[c+d\,x]]\,(a+b\,\text{Sinh}[c+d\,x])}{8\,(a-i\,b)\,d^2\,(b+a\,\text{Csch}[c+d\,x])}+$$
$$\frac{i\,f\,\text{Csch}[c+d\,x]\,\text{Log}[\text{Cosh}[c+d\,x]]\,(a+b\,\text{Sinh}[c+d\,x])}{8\,(a+i\,b)\,d^2\,(b+a\,\text{Csch}[c+d\,x])}+$$
$$\frac{e\,\text{Csch}[c+d\,x]\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]\right](a+b\,\text{Sinh}[c+d\,x])}{4\,a\,d\,(b+a\,\text{Csch}[c+d\,x])}-$$
$$\frac{c\,f\,\text{Csch}[c+d\,x]\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d\,x)\right]\right](a+b\,\text{Sinh}[c+d\,x])}{4\,a\,d^2\,(b+a\,\text{Csch}[c+d\,x])}-$$
$$\Big(i\,f\,\text{Csch}[c+d\,x]\,\Big(i\,(c+d\,x)\left(\text{Log}\left[1-e^{-c-d\,x}\right]-\text{Log}\left[1+e^{-c-d\,x}\right]\right)+$$
$$i\left(\text{PolyLog}\left[2,-e^{-c-d\,x}\right]-\text{PolyLog}\left[2,e^{-c-d\,x}\right]\right)\Big)(a+b\,\text{Sinh}[c+d\,x])\Big)\Big/$$
$$\left(4\,a\,d^2\,(b+a\,\text{Csch}[c+d\,x])\right)+\frac{1}{4\,a\left(-\left(a^2+b^2\right)^2\right)^{3/2}d^2\,(b+a\,\text{Csch}[c+d\,x])}$$
$$b^3\left(a^2+b^2\right)\text{Csch}[c+d\,x]\left(2\sqrt{a^2+b^2}\,d\,e\,\text{ArcTan}\left[\frac{a+b\,\text{Cosh}[c+d\,x]+b\,\text{Sinh}[c+d\,x]}{\sqrt{-a^2-b^2}}\right]-\right.$$
$$2\sqrt{a^2+b^2}\,c\,f\,\text{ArcTan}\left[\frac{a+b\,\text{Cosh}[c+d\,x]+b\,\text{Sinh}[c+d\,x]}{\sqrt{-a^2-b^2}}\right]+$$
$$\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x])}{a-\sqrt{a^2+b^2}}\right]-$$
$$\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x])}{a+\sqrt{a^2+b^2}}\right]+$$
$$\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,\frac{b\,(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x])}{-a+\sqrt{a^2+b^2}}\right]-$$
$$\left.\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x])}{a+\sqrt{a^2+b^2}}\right]\right)(a+b\,\text{Sinh}[c+d\,x])+$$
$$\Big(\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]\,(a+b\,\text{Sinh}[c+d\,x])\,\big(a\,d\,e-a\,c\,f+a\,f\,(c+d\,x)-b\,d\,e\,\text{Sinh}[c+d\,x]+$$
$$\left.b\,c\,f\,\text{Sinh}[c+d\,x]-b\,f\,(c+d\,x)\,\text{Sinh}[c+d\,x]\big)\Big)\Big/\left(4\left(a^2+b^2\right)d^2\,(b+a\,\text{Csch}[c+d\,x])\right)\right)$$

Problem 443: Result more than twice size of optimal antiderivative.

$$\int\frac{\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 3, 113 leaves, 10 steps):

$$-\frac{\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a\,d}+\frac{2\,b^3\,\text{ArcTanh}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{a^2+b^2}}\right]}{a\,\left(a^2+b^2\right)^{3/2}\,d}+$$
$$\frac{\text{Sech}[c+d\,x]}{a\,d}-\frac{b\,\text{Sech}[c+d\,x]\,\left(b+a\,\text{Sinh}[c+d\,x]\right)}{a\,\left(a^2+b^2\right)\,d}$$

Result (type 3, 233 leaves):

$$-\frac{1}{a\,\left(-a^2-b^2\right)^{3/2}\,d}\left(-2\,b^3\,\text{ArcTan}\left[\frac{b-a\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]}{\sqrt{-a^2-b^2}}\right]-a^2\,\sqrt{-a^2-b^2}\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-\right.$$
$$b^2\,\sqrt{-a^2-b^2}\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+a^2\,\sqrt{-a^2-b^2}\,\text{Log}\left[\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$
$$\left.b^2\,\sqrt{-a^2-b^2}\,\text{Log}\left[\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+a^2\,\sqrt{-a^2-b^2}\,\text{Sech}[c+d\,x]-a\,b\,\sqrt{-a^2-b^2}\,\text{Tanh}[c+d\,x]\right)$$

Problem 444: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]^2}{(e+f\,x)\,\left(a+b\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]^2}{(e+f\,x)\,\left(a+b\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 445: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Csch}[c+d\,x]\,\text{Sech}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1185 leaves, 57 steps):

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

$$\frac{b f^2 \text{ArcTan}[\text{Sinh}[c+d x]]}{\left(a^2+b^2\right) d^3}-\frac{2 (e+f x)^2 \text{ArcTanh}\left[e^{2 c+2 d x}\right]}{a d}-\frac{b^4 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right)^2 d}-$$

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

$$\frac{b^2 f^2 \text{Log}[\text{Cosh}[c+d x]]}{a \left(a^2+b^2\right) d^3}+\frac{2 i b^3 f (e+f x) \text{PolyLog}\left[2,-i e^{c+d x}\right]}{\left(a^2+b^2\right)^2 d^2}+$$

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

$$\frac{i b f (e+f x) \text{PolyLog}\left[2,i e^{c+d x}\right]}{\left(a^2+b^2\right) d^2}-\frac{2 b^4 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a \left(a^2+b^2\right)^2 d^2}-$$

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

$$\frac{f (e+f x) \text{PolyLog}\left[2,-e^{2 c+2 d x}\right]}{a d^2}+\frac{f (e+f x) \text{PolyLog}\left[2,e^{2 c+2 d x}\right]}{a d^2}-$$

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

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

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

$$\frac{b f (e+f x) \text{Sech}[c+d x]}{\left(a^2+b^2\right) d^2}-\frac{b^2 (e+f x)^2 \text{Sech}[c+d x]^2}{2 a \left(a^2+b^2\right) d}-\frac{f (e+f x) \text{Tanh}[c+d x]}{a d^2}+$$

$$\frac{b^2 f (e+f x) \text{Tanh}[c+d x]}{a \left(a^2+b^2\right) d^2}-\frac{b (e+f x)^2 \text{Sech}[c+d x] \text{Tanh}[c+d x]}{2 \left(a^2+b^2\right) d}-\frac{(e+f x)^2 \text{Tanh}[c+d x]^2}{2 a d}$$

Result (type 4, 3699 leaves):

$$-\frac{1}{6 \left(a^2+b^2\right)^2 d^3 \left(1+e^{2 c}\right)}$$

$$\left(-12 a^3 d^3 e^2 e^{2 c} x-24 a b^2 d^3 e^2 e^{2 c} x+12 a^3 d e^{2 c} f^2 x+12 a b^2 d e^{2 c} f^2 x-12 a^3 d^3 e e^{2 c} f x^2-\right.$$
$$24 a b^2 d^3 e e^{2 c} f x^2-4 a^3 d^3 e^{2 c} f^2 x^3-8 a b^2 d^3 e^{2 c} f^2 x^3+6 a^2 b d^2 e^2 \text{ArcTan}\left[e^{c+d x}\right]+$$
$$18 b^3 d^2 e^2 \text{ArcTan}\left[e^{c+d x}\right]+6 a^2 b d^2 e^2 e^{2 c} \text{ArcTan}\left[e^{c+d x}\right]+18 b^3 d^2 e^2 e^{2 c} \text{ArcTan}\left[e^{c+d x}\right]-$$
$$12 a^2 b f^2 \text{ArcTan}\left[e^{c+d x}\right]-12 b^3 f^2 \text{ArcTan}\left[e^{c+d x}\right]-12 a^2 b e^{2 c} f^2 \text{ArcTan}\left[e^{c+d x}\right]-$$

$$12\,b^3\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{ArcTan}\left[\mathrm{e}^{c+d\,x}\right]+6\,\mathrm{i}\,a^2\,b\,d^2\,e\,f\,x\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+18\,\mathrm{i}\,b^3\,d^2\,e\,f\,x\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$6\,\mathrm{i}\,a^2\,b\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+18\,\mathrm{i}\,b^3\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$3\,\mathrm{i}\,a^2\,b\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+9\,\mathrm{i}\,b^3\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$3\,\mathrm{i}\,a^2\,b\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+9\,\mathrm{i}\,b^3\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$6\,\mathrm{i}\,a^2\,b\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-18\,\mathrm{i}\,b^3\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$6\,\mathrm{i}\,a^2\,b\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-18\,\mathrm{i}\,b^3\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$3\,\mathrm{i}\,a^2\,b\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-9\,\mathrm{i}\,b^3\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$3\,\mathrm{i}\,a^2\,b\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-9\,\mathrm{i}\,b^3\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$6\,a^3\,d^2\,e^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d^2\,e^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+6\,a^3\,d^2\,e^2\,\mathrm{e}^{2\,c}\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$12\,a\,b^2\,d^2\,e^2\,\mathrm{e}^{2\,c}\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]-6\,a^3\,f^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]-6\,a\,b^2\,f^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]-$$
$$6\,a^3\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]-6\,a\,b^2\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$12\,a^3\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+24\,a\,b^2\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$12\,a^3\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+24\,a\,b^2\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$6\,a^3\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$6\,a^3\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\mathrm{e}^{2\,(c+d\,x)}\right]-$$
$$6\,\mathrm{i}\,b\,\left(a^2+3\,b^2\right)\,d\,\left(1+\mathrm{e}^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$6\,\mathrm{i}\,b\,\left(a^2+3\,b^2\right)\,d\,\left(1+\mathrm{e}^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$6\,a^3\,d\,e\,f\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d\,e\,f\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$6\,a^3\,d\,e\,\mathrm{e}^{2\,c}\,f\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d\,e\,\mathrm{e}^{2\,c}\,f\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$6\,a^3\,d\,f^2\,x\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d\,f^2\,x\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$6\,a^3\,d\,\mathrm{e}^{2\,c}\,f^2\,x\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+12\,a\,b^2\,d\,\mathrm{e}^{2\,c}\,f^2\,x\,\mathrm{PolyLog}\left[2,\,-\mathrm{e}^{2\,(c+d\,x)}\right]+$$
$$6\,\mathrm{i}\,a^2\,b\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+18\,\mathrm{i}\,b^3\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+$$
$$6\,\mathrm{i}\,a^2\,b\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]+18\,\mathrm{i}\,b^3\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$6\,\mathrm{i}\,a^2\,b\,f^2\,\mathrm{PolyLog}\left[3,\,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-18\,\mathrm{i}\,b^3\,f^2\,\mathrm{PolyLog}\left[3,\,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$6\,\mathrm{i}\,a^2\,b\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-18\,\mathrm{i}\,b^3\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,\mathrm{i}\,\mathrm{e}^{c+d\,x}\right]-$$
$$3\,a^3\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{e}^{2\,(c+d\,x)}\right]-6\,a\,b^2\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{e}^{2\,(c+d\,x)}\right]-$$
$$3\,a^3\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{e}^{2\,(c+d\,x)}\right]-6\,a\,b^2\,\mathrm{e}^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-\mathrm{e}^{2\,(c+d\,x)}\right]\Big)+$$
$$\frac{1}{6\,a}\left(-\frac{4\,\mathrm{e}^{2\,c}\,x\,\left(3\,e^2+3\,e\,f\,x+f^2\,x^2\right)}{-1+\mathrm{e}^{2\,c}}+\frac{6\,\left(e+f\,x\right)^2\,\mathrm{Log}\left[1-\mathrm{e}^{2\,(c+d\,x)}\right]}{d}+\right.$$
$$\left.\frac{6\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,\mathrm{e}^{2\,(c+d\,x)}\right]}{d^2}-\frac{3\,f^2\,\mathrm{PolyLog}\left[3,\,\mathrm{e}^{2\,(c+d\,x)}\right]}{d^3}\right)+$$
$$\frac{1}{3\,a\,\left(a^2+b^2\right)^2\,d^3\,\left(-1+\mathrm{e}^{2\,c}\right)}\,b^4\,\Bigg(6\,d^3\,e^2\,\mathrm{e}^{2\,c}\,x+6\,d^3\,e\,\mathrm{e}^{2\,c}\,f\,x^2+2\,d^3\,\mathrm{e}^{2\,c}\,f^2\,x^3+$$
$$3\,d^2\,e^2\,\mathrm{Log}\left[2\,a\,\mathrm{e}^{c+d\,x}+b\,\left(-1+\mathrm{e}^{2\,(c+d\,x)}\right)\right]-3\,d^2\,e^2\,\mathrm{e}^{2\,c}\,\mathrm{Log}\left[2\,a\,\mathrm{e}^{c+d\,x}+b\,\left(-1+\mathrm{e}^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathrm{e}^{2\,c+d\,x}}{a\,\mathrm{e}^{c}-\sqrt{\left(a^2+b^2\right)\,\mathrm{e}^{2\,c}}}\right]-6\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathrm{e}^{2\,c+d\,x}}{a\,\mathrm{e}^{c}-\sqrt{\left(a^2+b^2\right)\,\mathrm{e}^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,\mathrm{e}^{2\,c+d\,x}}{a\,\mathrm{e}^{c}-\sqrt{\left(a^2+b^2\right)\,\mathrm{e}^{2\,c}}}\right]-3\,d^2\,\mathrm{e}^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,\mathrm{e}^{2\,c+d\,x}}{a\,\mathrm{e}^{c}-\sqrt{\left(a^2+b^2\right)\,\mathrm{e}^{2\,c}}}\right]+$$
$$6\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathrm{e}^{2\,c+d\,x}}{a\,\mathrm{e}^{c}+\sqrt{\left(a^2+b^2\right)\,\mathrm{e}^{2\,c}}}\right]-6\,d^2\,e\,\mathrm{e}^{2\,c}\,f\,x\,\mathrm{Log}\left[1+\frac{b\,\mathrm{e}^{2\,c+d\,x}}{a\,\mathrm{e}^{c}+\sqrt{\left(a^2+b^2\right)\,\mathrm{e}^{2\,c}}}\right]+$$

$$3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$6 f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$
$$\left.6 f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\right)+$$
$$\frac{1}{24 \left(a^2+b^2\right)^2 d^2} \text{Csch}[c] \text{ Sech}[c] \text{ Sech}[c+d x]^2$$
$$\left(-6 a^3 e f-6 a b^2 e f+12 a^3 d^2 e^2 x+24 a b^2 d^2 e^2 x-6 a^3 f^2 x-6 a b^2 f^2 x+12 a^3 d^2 e f x^2+\right.$$
$$24 a b^2 d^2 e f x^2+4 a^3 d^2 f^2 x^3+8 a b^2 d^2 f^2 x^3+6 a^3 e f \text{Cosh}[2 c]+6 a b^2 e f \text{Cosh}[2 c]+$$
$$6 a^3 f^2 x \text{Cosh}[2 c]+6 a b^2 f^2 x \text{Cosh}[2 c]+6 a^3 e f \text{Cosh}[2 d x]+6 a b^2 e f \text{Cosh}[2 d x]+$$
$$6 a^3 f^2 x \text{Cosh}[2 d x]+6 a b^2 f^2 x \text{Cosh}[2 d x]+3 a^2 b d e^2 \text{Cosh}[c-d x]+3 b^3 d e^2 \text{Cosh}[c-d x]+$$
$$6 a^2 b d e f x \text{Cosh}[c-d x]+6 b^3 d e f x \text{Cosh}[c-d x]+3 a^2 b d f^2 x^2 \text{Cosh}[c-d x]+$$
$$3 b^3 d f^2 x^2 \text{Cosh}[c-d x]-3 a^2 b d e^2 \text{Cosh}[3 c+d x]-3 b^3 d e^2 \text{Cosh}[3 c+d x]-$$
$$6 a^2 b d e f x \text{Cosh}[3 c+d x]-6 b^3 d e f x \text{Cosh}[3 c+d x]-3 a^2 b d f^2 x^2 \text{Cosh}[3 c+d x]-$$
$$3 b^3 d f^2 x^2 \text{Cosh}[3 c+d x]-6 a^3 e f \text{Cosh}[2 c+2 d x]-6 a b^2 e f \text{Cosh}[2 c+2 d x]+$$
$$12 a^3 d^2 e^2 x \text{Cosh}[2 c+2 d x]+24 a b^2 d^2 e^2 x \text{Cosh}[2 c+2 d x]-6 a^3 f^2 x \text{Cosh}[2 c+2 d x]-$$
$$6 a b^2 f^2 x \text{Cosh}[2 c+2 d x]+12 a^3 d^2 e f x^2 \text{Cosh}[2 c+2 d x]+24 a b^2 d^2 e f x^2 \text{Cosh}[2 c+2 d x]+$$
$$4 a^3 d^2 f^2 x^3 \text{Cosh}[2 c+2 d x]+8 a b^2 d^2 f^2 x^3 \text{Cosh}[2 c+2 d x]+6 a^3 d e^2 \text{Sinh}[2 c]+$$
$$6 a b^2 d e^2 \text{Sinh}[2 c]+12 a^3 d e f x \text{Sinh}[2 c]+12 a b^2 d e f x \text{Sinh}[2 c]+6 a^3 d f^2 x^2 \text{Sinh}[2 c]+$$
$$6 a b^2 d f^2 x^2 \text{Sinh}[2 c]-6 a^2 b e f \text{Sinh}[c-d x]-6 b^3 e f \text{Sinh}[c-d x]-$$
$$6 a^2 b f^2 x \text{Sinh}[c-d x]-6 b^3 f^2 x \text{Sinh}[c-d x]-6 a^2 b e f \text{Sinh}[3 c+d x]-$$
$$\left.6 b^3 e f \text{Sinh}[3 c+d x]-6 a^2 b f^2 x \text{Sinh}[3 c+d x]-6 b^3 f^2 x \text{Sinh}[3 c+d x]\right)$$

Problem 448: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Csch}[c+d x] \text{ Sech}[c+d x]^3}{(e+f x) (a+b \text{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d x] \text{ Sech}[c+d x]^3}{(e+f x) (a+b \text{Sinh}[c+d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Problem 449: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Coth}[c+d x] \operatorname{Csch}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 601 leaves, 27 steps):

$$-\frac{6 f (e+f x)^2 \operatorname{ArcTanh}\left[e^{c+d x}\right]}{a d^2}-\frac{(e+f x)^3 \operatorname{Csch}[c+d x]}{a d}+\frac{b (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 d}+\frac{b (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 d}-\frac{b (e+f x)^3 \operatorname{Log}\left[1-e^{2 (c+d x)}\right]}{a^2 d}-\frac{6 f^2 (e+f x) \operatorname{PolyLog}\left[2,-e^{c+d x}\right]}{a d^3}+\frac{6 f^2 (e+f x) \operatorname{PolyLog}\left[2, e^{c+d x}\right]}{a d^3}+\frac{3 b f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 d^2}+\frac{3 b f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 d^2}-\frac{3 b f (e+f x)^2 \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]}{2 a^2 d^2}+\frac{6 f^3 \operatorname{PolyLog}\left[3,-e^{c+d x}\right]}{a d^4}-\frac{6 f^3 \operatorname{PolyLog}\left[3, e^{c+d x}\right]}{a d^4}-\frac{6 b f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 d^3}-\frac{6 b f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 d^3}+\frac{3 b f^2 (e+f x) \operatorname{PolyLog}\left[3, e^{2 (c+d x)}\right]}{2 a^2 d^3}+\frac{6 b f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 d^4}+\frac{6 b f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 d^4}-\frac{3 b f^3 \operatorname{PolyLog}\left[4, e^{2 (c+d x)}\right]}{4 a^2 d^4}$$

Result (type 4, 2646 leaves):

$$-\frac{(e+f x)^3 \operatorname{Csch}[c]}{a d}+\frac{1}{4 a^2 d^4 \left(-1+e^{2 c}\right)}$$
$$\left(8 b d^4 e^3 e^{2 c} x+12 b d^4 e^2 e^{2 c} f x^2+8 b d^4 e e^{2 c} f^2 x^3+2 b d^4 e^{2 c} f^3 x^4+24 a d^2 e^2 f \operatorname{ArcTanh}\left[e^{c+d x}\right]-\right.$$
$$24 a d^2 e^2 e^{2 c} f \operatorname{ArcTanh}\left[e^{c+d x}\right]-24 a d^2 e f^2 x \operatorname{Log}\left[1-e^{c+d x}\right]+24 a d^2 e e^{2 c} f^2 x \operatorname{Log}\left[1-e^{c+d x}\right]-$$
$$12 a d^2 f^3 x^2 \operatorname{Log}\left[1-e^{c+d x}\right]+12 a d^2 e^{2 c} f^3 x^2 \operatorname{Log}\left[1-e^{c+d x}\right]+24 a d^2 e f^2 x \operatorname{Log}\left[1+e^{c+d x}\right]-$$
$$24 a d^2 e e^{2 c} f^2 x \operatorname{Log}\left[1+e^{c+d x}\right]+12 a d^2 f^3 x^2 \operatorname{Log}\left[1+e^{c+d x}\right]-12 a d^2 e^{2 c} f^3 x^2 \operatorname{Log}\left[1+e^{c+d x}\right]+$$
$$4 b d^3 e^3 \operatorname{Log}\left[1-e^{2 (c+d x)}\right]-4 b d^3 e^3 e^{2 c} \operatorname{Log}\left[1-e^{2 (c+d x)}\right]+12 b d^3 e^2 f x \operatorname{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 b d^3 e^2 e^{2 c} f x \operatorname{Log}\left[1-e^{2 (c+d x)}\right]+12 b d^3 e f^2 x^2 \operatorname{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 b d^3 e e^{2 c} f^2 x^2 \operatorname{Log}\left[1-e^{2 (c+d x)}\right]+4 b d^3 f^3 x^3 \operatorname{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$4 b d^3 e^{2 c} f^3 x^3 \operatorname{Log}\left[1-e^{2 (c+d x)}\right]-24 a d \left(-1+e^{2 c}\right) f^2 (e+f x) \operatorname{PolyLog}\left[2,-e^{c+d x}\right]+$$
$$24 a d \left(-1+e^{2 c}\right) f^2 (e+f x) \operatorname{PolyLog}\left[2, e^{c+d x}\right]+6 b d^2 e^2 f \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]-$$
$$6 b d^2 e^2 e^{2 c} f \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]+12 b d^2 e f^2 x \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]-$$
$$12 b d^2 e e^{2 c} f^2 x \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]+6 b d^2 f^3 x^2 \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]-$$
$$6 b d^2 e^{2 c} f^3 x^2 \operatorname{PolyLog}\left[2, e^{2 (c+d x)}\right]-24 a f^3 \operatorname{PolyLog}\left[3,-e^{c+d x}\right]+$$
$$24 a e^{2 c} f^3 \operatorname{PolyLog}\left[3,-e^{c+d x}\right]+24 a f^3 \operatorname{PolyLog}\left[3, e^{c+d x}\right]-24 a e^{2 c} f^3 \operatorname{PolyLog}\left[3, e^{c+d x}\right]-$$
$$6 b d e f^2 \operatorname{PolyLog}\left[3, e^{2 (c+d x)}\right]+6 b d e e^{2 c} f^2 \operatorname{PolyLog}\left[3, e^{2 (c+d x)}\right]-$$

$$6\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+$$

$$3\,b\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]-3\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]\Big)-$$

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

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

$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

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

$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

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

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2$$

$$\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$12\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,f^3\,x$$

$$\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e$$

$$e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$12\, e^{2c} f^3 \,\text{PolyLog}\left[4,-\frac{b\, e^{2c+dx}}{a\, e^c+\sqrt{\left(a^2+b^2\right) e^{2c}}}\right]\Bigg)+\frac{1}{2\,a\,d}$$

$$\text{Csch}\left[\frac{c}{2}\right]\text{Csch}\left[\frac{c}{2}+\frac{dx}{2}\right]\left(e^3\,\text{Sinh}\left[\frac{dx}{2}\right]+3\,e^2 f\,x\,\text{Sinh}\left[\frac{dx}{2}\right]+3\,e\,f^2 x^2\,\text{Sinh}\left[\frac{dx}{2}\right]+f^3 x^3\,\text{Sinh}\left[\frac{dx}{2}\right]\right)+$$

$$\frac{1}{2\,a\,d}$$

$$\text{Sech}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}+\frac{dx}{2}\right]$$

$$\left(e^3\,\text{Sinh}\left[\frac{dx}{2}\right]+3\,e^2 f\,x\,\text{Sinh}\left[\frac{dx}{2}\right]+3\,e\,f^2 x^2\,\text{Sinh}\left[\frac{dx}{2}\right]+f^3 x^3\,\text{Sinh}\left[\frac{dx}{2}\right]\right)$$

Problem 451: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 243 leaves, 15 steps):

$$-\frac{f\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a\,d^2}-\frac{(e+f\,x)\,\text{Csch}[c+d\,x]}{a\,d}+\frac{b\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,d}+$$

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

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

Result (type 4, 712 leaves):

$$\frac{1}{8 a^2 d^2}\left(-8 b c^2 f-4 i b c f \pi+b f \pi^2-16 b c d f x-4 i b d f \pi x-8 b d^2 f x^2-\right.$$

$$32 b f \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{ArcTan}\left[\frac{(a+i b) \operatorname{Cot}\left[\frac{1}{4}(2 i c+\pi+2 i d x)\right]}{\sqrt{a^2+b^2}}\right]-$$

$$4 a d e \operatorname{Coth}\left[\frac{1}{2}(c+d x)\right]-4 a d f x \operatorname{Coth}\left[\frac{1}{2}(c+d x)\right]-8 b c f \operatorname{Log}\left[1-e^{-2(c+d x)}\right]-$$

$$8 b d f x \operatorname{Log}\left[1-e^{-2(c+d x)}\right]+8 b c f \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$4 i b f \pi \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+8 b d f x \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$16 i b f \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{Log}\left[1+\frac{\left(-a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$8 b c f \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+4 i b f \pi \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$8 b d f x \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-$$

$$16 i b f \operatorname{ArcSin}\left[\frac{\sqrt{1+\frac{i a}{b}}}{\sqrt{2}}\right] \operatorname{Log}\left[1-\frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]-8 b d e \operatorname{Log}[\operatorname{Sinh}[c+d x]]+$$

$$8 b c f \operatorname{Log}[\operatorname{Sinh}[c+d x]]-4 i b f \pi \operatorname{Log}[a+b \operatorname{Sinh}[c+d x]]+8 b d e \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]-$$

$$8 b c f \operatorname{Log}\left[1+\frac{b \operatorname{Sinh}[c+d x]}{a}\right]+8 a f \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]+$$

$$4 b f \operatorname{PolyLog}\left[2, e^{-2(c+d x)}\right]+8 b f \operatorname{PolyLog}\left[2, \frac{\left(a-\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+$$

$$\left.8 b f \operatorname{PolyLog}\left[2, \frac{\left(a+\sqrt{a^2+b^2}\right) e^{c+d x}}{b}\right]+4 a d e \operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]+4 a d f x \operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right)$$

Problem 453: Attempted integration timed out after 120 seconds.

$$\int \frac{\operatorname{Coth}[c+d x] \operatorname{Csch}[c+d x]}{(e+f x)(a+b \operatorname{Sinh}[c+d x])} d x$$

Optimal (type 8, 35 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 454: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 721 leaves, 41 steps):

$$-\frac{(e+f\,x)^3}{a\,d}+\frac{2\,b\,(e+f\,x)^3\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a^2\,d}-\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]}{a\,d}+$$
$$\frac{\sqrt{a^2+b^2}\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,d}-\frac{\sqrt{a^2+b^2}\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,d}+$$
$$\frac{3\,f\,(e+f\,x)^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a\,d^2}+\frac{3\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]}{a^2\,d^2}-$$
$$\frac{3\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]}{a^2\,d^2}+\frac{3\,\sqrt{a^2+b^2}\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,d^2}-$$
$$\frac{3\,\sqrt{a^2+b^2}\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,d^2}+\frac{3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]}{a\,d^3}-$$
$$\frac{6\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]}{a^2\,d^3}+\frac{6\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]}{a^2\,d^3}-$$
$$\frac{6\,\sqrt{a^2+b^2}\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,d^3}+\frac{6\,\sqrt{a^2+b^2}\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,d^3}-$$
$$\frac{3\,f^3\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]}{2\,a\,d^4}+\frac{6\,b\,f^3\,\text{PolyLog}\left[4,\,-e^{c+d\,x}\right]}{a^2\,d^4}-\frac{6\,b\,f^3\,\text{PolyLog}\left[4,\,e^{c+d\,x}\right]}{a^2\,d^4}+$$
$$\frac{6\,\sqrt{a^2+b^2}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,d^4}-\frac{6\,\sqrt{a^2+b^2}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,d^4}$$

Result (type 4, 2213 leaves):

$$-\frac{1}{2\,a^2\,d^4\,\left(-1+e^{2\,c}\right)}\Big(12\,a\,d^3\,e^2\,e^{2\,c}\,f\,x+12\,a\,d^3\,e\,e^{2\,c}\,f^2\,x^2+4\,a\,d^3\,e^{2\,c}\,f^3\,x^3+$$
$$4\,b\,d^3\,e^3\,\text{ArcTanh}\left[e^{c+d\,x}\right]-4\,b\,d^3\,e^3\,e^{2\,c}\,\text{ArcTanh}\left[e^{c+d\,x}\right]-6\,b\,d^3\,e^2\,f\,x\,\text{Log}\left[1-e^{c+d\,x}\right]+$$
$$6\,b\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1-e^{c+d\,x}\right]-6\,b\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]+6\,b\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]-$$
$$2\,b\,d^3\,f^3\,x^3\,\text{Log}\left[1-e^{c+d\,x}\right]+2\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1-e^{c+d\,x}\right]+6\,b\,d^3\,e^2\,f\,x\,\text{Log}\left[1+e^{c+d\,x}\right]-$$
$$6\,b\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+e^{c+d\,x}\right]+6\,b\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]-6\,b\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]+$$

$$2\,b\,d^3\,f^3\,x^3\,\text{Log}\left[1+e^{c+d\,x}\right]-2\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+e^{c+d\,x}\right]+6\,a\,d^2\,e^2\,f\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$6\,a\,d^2\,e^2\,e^{2\,c}\,f\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]+12\,a\,d^2\,e\,f^2\,x\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$12\,a\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]+6\,a\,d^2\,f^3\,x^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$6\,a\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-6\,b\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]+$$
$$6\,b\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]+6\,a\,d\,e\,f^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-$$
$$6\,a\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+6\,a\,d\,f^3\,x\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-$$
$$6\,a\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-12\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+$$
$$12\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]-12\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+$$
$$12\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+12\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-$$
$$12\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]+12\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-$$
$$12\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-3\,a\,f^3\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+$$
$$3\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+12\,b\,f^3\,\text{PolyLog}\left[4,\,-e^{c+d\,x}\right]-$$
$$12\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,-e^{c+d\,x}\right]-12\,b\,f^3\,\text{PolyLog}\left[4,\,e^{c+d\,x}\right]+12\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,e^{c+d\,x}\right]\Big)+$$

$$\frac{1}{a^2\,d^4\,\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\sqrt{-a^2-b^2}\,\left(-2\,d^3\,e^3\,\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]-\right.$$
$$3\,\sqrt{-a^2-b^2}\,d^3\,e^2\,e^c\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,\sqrt{-a^2-b^2}\,d^3\,e\,e^c\,f^2\,x^2$$
$$\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-\sqrt{-a^2-b^2}\,d^3\,e^c\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,\sqrt{-a^2-b^2}\,d^3\,e^2\,e^c\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+3\,\sqrt{-a^2-b^2}\,d^3\,e\,e^c\,f^2\,x^2$$
$$\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+\sqrt{-a^2-b^2}\,d^3\,e^c\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$3\,\sqrt{-a^2-b^2}\,d^2\,e^c\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,\sqrt{-a^2-b^2}\,d^2\,e^c\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,\sqrt{-a^2-b^2}\,d\,e\,e^c\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,\sqrt{-a^2-b^2}\,d\,e^c\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\ e^c f^3 \text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$\left.6\sqrt{-a^2-b^2}\ e^c f^3 \text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]\right)+$$

$$\frac{1}{2ad}\text{Sech}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}+\frac{dx}{2}\right]\left(-e^3\text{Sinh}\left[\frac{dx}{2}\right]-3e^2 f x\,\text{Sinh}\left[\frac{dx}{2}\right]-3ef^2x^2\text{Sinh}\left[\frac{dx}{2}\right]-f^3x^3\text{Sinh}\left[\frac{dx}{2}\right]\right)+\frac{1}{2ad}$$

$$\text{Csch}\left[\frac{c}{2}\right]\text{Csch}\left[\frac{c}{2}+\frac{dx}{2}\right]\left(e^3\text{Sinh}\left[\frac{dx}{2}\right]+3e^2 f x\,\text{Sinh}\left[\frac{dx}{2}\right]+3ef^2x^2\text{Sinh}\left[\frac{dx}{2}\right]+f^3x^3\text{Sinh}\left[\frac{dx}{2}\right]\right)$$

Problem 455: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+fx)^2\,\text{Coth}[c+dx]^2}{a+b\,\text{Sinh}[c+dx]}\,dx$$

Optimal (type 4, 517 leaves, 34 steps):

$$-\frac{(e+fx)^2}{ad}+\frac{2b(e+fx)^2\text{ArcTanh}\left[e^{c+dx}\right]}{a^2 d}-\frac{(e+fx)^2\text{Coth}[c+dx]}{ad}+$$
$$\frac{\sqrt{a^2+b^2}\,(e+fx)^2\text{Log}\left[1+\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a^2 d}-\frac{\sqrt{a^2+b^2}\,(e+fx)^2\text{Log}\left[1+\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a^2 d}+$$
$$\frac{2f(e+fx)\text{Log}\left[1-e^{2(c+dx)}\right]}{ad^2}+\frac{2bf(e+fx)\text{PolyLog}\left[2,-e^{c+dx}\right]}{a^2d^2}-$$
$$\frac{2bf(e+fx)\text{PolyLog}\left[2,e^{c+dx}\right]}{a^2d^2}+\frac{2\sqrt{a^2+b^2}\,f(e+fx)\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a^2d^2}-$$
$$\frac{2\sqrt{a^2+b^2}\,f(e+fx)\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a^2d^2}+\frac{f^2\text{PolyLog}\left[2,e^{2(c+dx)}\right]}{ad^3}-$$
$$\frac{2bf^2\text{PolyLog}\left[3,-e^{c+dx}\right]}{a^2d^3}+\frac{2bf^2\text{PolyLog}\left[3,e^{c+dx}\right]}{a^2d^3}-$$
$$\frac{2\sqrt{a^2+b^2}\,f^2\text{PolyLog}\left[3,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a^2d^3}+\frac{2\sqrt{a^2+b^2}\,f^2\text{PolyLog}\left[3,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a^2d^3}$$

Result (type 4, 1037 leaves):

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

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

$$\frac{1}{2 a d}\text{Sech}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}+\frac{d x}{2}\right]\left(-e^2 \text{Sinh}\left[\frac{d x}{2}\right]-2 e f x \text{Sinh}\left[\frac{d x}{2}\right]-f^2 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)+$$

$$\frac{1}{2 a d}\text{Csch}\left[\frac{c}{2}\right]\text{Csch}\left[\frac{c}{2}+\frac{d x}{2}\right]\left(e^2 \text{Sinh}\left[\frac{d x}{2}\right]+2 e f x \text{Sinh}\left[\frac{d x}{2}\right]+f^2 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)$$

Problem 458: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Coth}[c+d x]^2}{(e+f x)\,(a+b \text{Sinh}[c+d x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Coth}[c+d x]^2}{(e+f x)\,(a+b \text{Sinh}[c+d x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 459: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Cosh}[c+d x] \operatorname{Coth}[c+d x]^2}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 718 leaves, 48 steps):

$$\frac{b (e+f x)^4}{4 a^2 f}-\frac{(a^2+b^2) (e+f x)^4}{4 a^2 b f}-\frac{6 f (e+f x)^2 \operatorname{ArcTanh}[e^{c+d x}]}{a d^2}-\frac{(e+f x)^3 \operatorname{Csch}[c+d x]}{a d}+\frac{(a^2+b^2) (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 b d}+\frac{(a^2+b^2) (e+f x)^3 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 b d}-\frac{b (e+f x)^3 \operatorname{Log}[1-e^{2 (c+d x)}]}{a^2 d}-\frac{6 f^2 (e+f x) \operatorname{PolyLog}[2,-e^{c+d x}]}{a d^3}+\frac{6 f^2 (e+f x) \operatorname{PolyLog}[2,e^{c+d x}]}{a d^3}+\frac{3 (a^2+b^2) f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 b d^2}+\frac{3 (a^2+b^2) f (e+f x)^2 \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 b d^2}-\frac{3 b f (e+f x)^2 \operatorname{PolyLog}[2,e^{2 (c+d x)}]}{2 a^2 d^2}+\frac{6 f^3 \operatorname{PolyLog}[3,-e^{c+d x}]}{a d^4}-\frac{6 f^3 \operatorname{PolyLog}[3,e^{c+d x}]}{a d^4}-\frac{6 (a^2+b^2) f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 b d^3}-\frac{6 (a^2+b^2) f^2 (e+f x) \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 b d^3}+\frac{3 b f^2 (e+f x) \operatorname{PolyLog}[3,e^{2 (c+d x)}]}{2 a^2 d^3}+\frac{6 (a^2+b^2) f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 b d^4}+\frac{6 (a^2+b^2) f^3 \operatorname{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 b d^4}-\frac{3 b f^3 \operatorname{PolyLog}[4,e^{2 (c+d x)}]}{4 a^2 d^4}$$

Result (type 4, 2744 leaves):

$$\frac{1}{4 a^2 d^4 (-1+e^{2 c})} \Big(8 b d^4 e^3 e^{2 c} x+12 b d^4 e^2 e^{2 c} f x^2+8 b d^4 e e^{2 c} f^2 x^3+2 b d^4 e^{2 c} f^3 x^4+24 a d^2 e^2 f \operatorname{ArcTanh}[e^{c+d x}]-24 a d^2 e^2 e^{2 c} f \operatorname{ArcTanh}[e^{c+d x}]-24 a d^2 e f^2 x \operatorname{Log}[1-e^{c+d x}]+24 a d^2 e e^{2 c} f^2 x \operatorname{Log}[1-e^{c+d x}]-12 a d^2 f^3 x^2 \operatorname{Log}[1-e^{c+d x}]+12 a d^2 e^{2 c} f^3 x^2 \operatorname{Log}[1-e^{c+d x}]+24 a d^2 e f^2 x \operatorname{Log}[1+e^{c+d x}]-24 a d^2 e e^{2 c} f^2 x \operatorname{Log}[1+e^{c+d x}]+12 a d^2 f^3 x^2 \operatorname{Log}[1+e^{c+d x}]-12 a d^2 e^{2 c} f^3 x^2 \operatorname{Log}[1+e^{c+d x}]+4 b d^3 e^3 \operatorname{Log}[1-e^{2 (c+d x)}]-4 b d^3 e^3 e^{2 c} \operatorname{Log}[1-e^{2 (c+d x)}]+12 b d^3 e^2 f x \operatorname{Log}[1-e^{2 (c+d x)}]-12 b d^3 e^2 e^{2 c} f x \operatorname{Log}[1-e^{2 (c+d x)}]+12 b d^3 e f^2 x^2 \operatorname{Log}[1-e^{2 (c+d x)}]-12 b d^3 e e^{2 c} f^2 x^2 \operatorname{Log}[1-e^{2 (c+d x)}]+4 b d^3 f^3 x^3 \operatorname{Log}[1-e^{2 (c+d x)}]-4 b d^3 e^{2 c} f^3 x^3 \operatorname{Log}[1-e^{2 (c+d x)}]-24 a d (-1+e^{2 c}) f^2 (e+f x) \operatorname{PolyLog}[2,-e^{c+d x}]+24 a d (-1+e^{2 c}) f^2 (e+f x) \operatorname{PolyLog}[2,e^{c+d x}]+6 b d^2 e^2 f \operatorname{PolyLog}[2,e^{2 (c+d x)}]-$$

$$6\,b\,d^2\,e^2\,e^{2\,c}\,f\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+12\,b\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-12\,b\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+6\,b\,d^2\,f^3\,x^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-6\,b\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-24\,a\,f^3\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+24\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+24\,a\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-24\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-6\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]-6\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+3\,b\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]-3\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]\Big)\Big)-$$

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

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

$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

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

$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

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

$$6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)^2$$

$$\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e$$

$$e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d\,e\,f^2$$

$$\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,d$$

$$f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+12\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$

$$12\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-12\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)+$$

$$\frac{1}{8\,a\,b\,d}\left(-4\,b\,e^3-12\,b\,e^2\,f\,x-12\,b\,e\,f^2\,x^2-4\,b\,f^3\,x^3+4\,a\,d\,e^3\,x\,\text{Cosh}[c]+\right.$$

$$\left.6\,a\,d\,e^2\,f\,x^2\,\text{Cosh}[c]+4\,a\,d\,e\,f^2\,x^3\,\text{Cosh}[c]+a\,d\,f^3\,x^4\,\text{Cosh}[c]\right)$$

$$\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]+\frac{1}{2\,a\,d}\text{Csch}\left[\frac{c}{2}\right]\,\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$

$$\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+$$

$$\frac{1}{2\,a\,d}\text{Sech}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$

$$\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)$$

Problem 460: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Cosh}[c+d\,x]\,\text{Coth}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 518 leaves, 37 steps):

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

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

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

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

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

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

Result (type 4, 1367 leaves):

$$\frac{1}{6\,a^2}\left(-12\,b\,e^2\,x+\frac{12\,b\,e^2\,e^{2\,c}\,x}{-1+e^{2\,c}}+\frac{12\,b\,e\,f\,x^2}{-1+e^{2\,c}}+\right.$$

$$\frac{4\,b\,f^2\,x^3}{-1+e^{2\,c}}-\frac{24\,a\,e\,f\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{d^2}+\frac{6\,b\,e^2\,\left(2\,d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)}{d}+\frac{1}{d^3}$$
$$12\,a\,f^2\,\left(d\,x\,\left(\text{Log}\left[1-e^{c+d\,x}\right]-\text{Log}\left[1+e^{c+d\,x}\right]\right)-\text{PolyLog}\left[2,-e^{c+d\,x}\right]+\text{PolyLog}\left[2,e^{c+d\,x}\right]\right)+$$
$$\frac{6\,b\,e\,f\,\left(2\,d\,x\,\left(d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]\right)}{d^2}+\frac{1}{d^3}$$
$$b\,f^2\,\left(2\,d^2\,x^2\,\left(2\,d\,x-3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-6\,d\,x\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]+3\,\text{PolyLog}\left[3,e^{2\,(c+d\,x)}\right]\right)\Bigg)-$$

$$\frac{1}{3\,a^2\,b\,d^3\,\left(-1+e^{2\,c}\right)}\,\left(a^2+b^2\right)\,\Bigg(6\,d^3\,e^2\,e^{2\,c}\,x+6\,d^3\,e\,e^{2\,c}\,f\,x^2+2\,d^3\,e^{2\,c}\,f^2\,x^3+$$
$$3\,d^2\,e^2\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]-3\,d^2\,e^2\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^2\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^2\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)+$$
$$\frac{1}{6\,a\,b\,d}\left(-3\,b\,e^2-6\,b\,e\,f\,x-3\,b\,f^2\,x^2+3\,a\,d\,e^2\,x\,\text{Cosh}[c]+3\,a\,d\,e\,f\,x^2\,\text{Cosh}[c]+a\,d\,f^2\,x^3\,\text{Cosh}[c]\right)$$
$$\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]+\frac{1}{2\,a\,d}$$
$$\text{Csch}\left[\frac{c}{2}\right]\,\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\,\left(e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+$$
$$\frac{1}{2\,a\,d}$$
$$\text{Sech}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$

$$\left(e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+2\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)$$

Problem 461: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Cosh}[c+d\,x]\,\text{Coth}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 324 leaves, 28 steps):

$$\frac{b\,(e+f\,x)^2}{2\,a^2\,f}-\frac{\left(a^2+b^2\right)\,(e+f\,x)^2}{2\,a^2\,b\,f}-\frac{f\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a\,d^2}-\frac{(e+f\,x)\,\text{Csch}[c+d\,x]}{a\,d}+\frac{\left(a^2+b^2\right)\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,b\,d}+\frac{\left(a^2+b^2\right)\,(e+f\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,b\,d}-\frac{b\,(e+f\,x)\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a^2\,d}+\frac{\left(a^2+b^2\right)\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,b\,d^2}+\frac{\left(a^2+b^2\right)\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,b\,d^2}-\frac{b\,f\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]}{2\,a^2\,d^2}$$

Result (type 4, 1196 leaves):

$$\frac{1}{2\,a\,d^2}\left(-d\,e\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+c\,f\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]-f\,(c+d\,x)\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Csch}\left[\frac{1}{2}\,(c+d\,x)\right]-\frac{b\,e\,\text{Log}[\text{Sinh}[c+d\,x]]}{a^2\,d}+\frac{b\,c\,f\,\text{Log}[\text{Sinh}[c+d\,x]]}{a^2\,d^2}+\frac{e\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]}{b\,d}+\frac{b\,e\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]}{a^2\,d}-\frac{c\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]}{b\,d^2}-\frac{b\,c\,f\,\text{Log}\left[1+\frac{b\,\text{Sinh}[c+d\,x]}{a}\right]}{a^2\,d^2}+\frac{f\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a\,d^2}+\frac{1}{a^2\,d^2}\,i\,b\,f\left(i\,(c+d\,x)\,\text{Log}\left[1-e^{-2\,(c+d\,x)}\right]-\frac{1}{2}\,i\left(-(c+d\,x)^2+\text{PolyLog}\left[2,e^{-2\,(c+d\,x)}\right]\right)\right)+$$

$$\frac{1}{d^2}\,f\left(\frac{(c+d\,x)\,\text{Log}[a+b\,\text{Sinh}[c+d\,x]]}{b}-\frac{1}{b}\,i\left(\frac{1}{2}\,i\left(\frac{\pi}{2}-i\,(c+d\,x)\right)^2-4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{i\,(a-i\,b)}{b}}}{\sqrt{2}}\right]\right.\right.$$

$$\text{ArcTan}\left[\frac{(a+i\,b)\,\text{Tan}\left[\frac{1}{2}\left(\frac{\pi}{2}-i\,(c+d\,x)\right)\right]}{\sqrt{a^2+b^2}}\right]-\left(\frac{\pi}{2}-i\,(c+d\,x)+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{i\,(a-i\,b)}{b}}}{\sqrt{2}}\right]\right.$$

$$\text{Log}\left[1+\frac{i\left(a-\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]-\left(\frac{\pi}{2}-i(c+dx)-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{i(a-ib)}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{i\left(a+\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]+\left(\frac{\pi}{2}-i(c+dx)\right)\text{Log}[a+b\,\text{Sinh}[c+dx]]+$$

$$i\left(\text{PolyLog}\left[2,-\frac{i\left(a-\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{i\left(a+\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]\right)\right)\right)+$$

$$\frac{1}{a^2 d^2}b^2 f\left(\frac{(c+dx)\,\text{Log}[a+b\,\text{Sinh}[c+dx]]}{b}-\frac{1}{b}i\left(\frac{1}{2}i\left(\frac{\pi}{2}-i(c+dx)\right)^2-4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{i(a-ib)}{b}}}{\sqrt{2}}\right]\right.\right.$$

$$\text{ArcTan}\left[\frac{(a+ib)\,\text{Tan}\left[\frac{1}{2}\left(\frac{\pi}{2}-i(c+dx)\right)\right]}{\sqrt{a^2+b^2}}\right]-\left(\frac{\pi}{2}-i(c+dx)+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{i(a-ib)}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{i\left(a-\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]-\left(\frac{\pi}{2}-i(c+dx)-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{i(a-ib)}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{i\left(a+\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]+\left(\frac{\pi}{2}-i(c+dx)\right)\text{Log}[a+b\,\text{Sinh}[c+dx]]+$$

$$i\left(\text{PolyLog}\left[2,-\frac{i\left(a-\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{i\left(a+\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i(c+dx)\right)}}{b}\right]\right)\right)\right)+$$

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

Problem 463: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Cosh}[c+d\,x]\,\text{Coth}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Cosh}[c+d\,x]\,\text{Coth}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 464: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1428 leaves, 64 steps):

$$-\frac{2\,(e+f\,x)^3\,\text{ArcTan}\left[e^{c+d\,x}\right]}{a\,d}+\frac{2\,b^2\,(e+f\,x)^3\,\text{ArcTan}\left[e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d}-\frac{6\,f\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d^2}+$$
$$\frac{2\,b\,(e+f\,x)^3\,\text{ArcTanh}\left[e^{2\,c+2\,d\,x}\right]}{a^2\,d}-\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]}{a\,d}+\frac{b^3\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d}+$$
$$\frac{b^3\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d}-\frac{b^3\,(e+f\,x)^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]}{a^2\,(a^2+b^2)\,d}-$$
$$\frac{6\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]}{a\,d^3}+\frac{3\,i\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{a\,d^2}-$$
$$\frac{3\,i\,b^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d^2}-\frac{3\,i\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,i\,e^{c+d\,x}\right]}{a\,d^2}+$$
$$\frac{3\,i\,b^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,i\,e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d^2}+\frac{6\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]}{a\,d^3}+$$
$$\frac{3\,b^3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d^2}+\frac{3\,b^3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d^2}-$$
$$\frac{3\,b^3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]}{2\,a^2\,(a^2+b^2)\,d^2}+\frac{3\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-e^{2\,c+2\,d\,x}\right]}{2\,a^2\,d^2}-$$

$$\frac{3\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,e^{2\,c+2\,d\,x}\right]}{2\,a^2\,d^2}+\frac{6\,f^3\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]}{a\,d^4}-$$
$$\frac{6\,i\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]}{a\,d^3}+\frac{6\,i\,b^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d^3}+$$
$$\frac{6\,i\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]}{a\,d^3}-\frac{6\,i\,b^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d^3}-$$
$$\frac{6\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]}{a\,d^4}-\frac{6\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d^3}-$$
$$\frac{6\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d^3}+\frac{3\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]}{2\,a^2\,(a^2+b^2)\,d^3}-$$
$$\frac{3\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-e^{2\,c+2\,d\,x}\right]}{2\,a^2\,d^3}+\frac{3\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,e^{2\,c+2\,d\,x}\right]}{2\,a^2\,d^3}+$$
$$\frac{6\,i\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]}{a\,d^4}-\frac{6\,i\,b^2\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d^4}-\frac{6\,i\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]}{a\,d^4}+$$
$$\frac{6\,i\,b^2\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]}{a\,(a^2+b^2)\,d^4}+\frac{6\,b^3\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d^4}+\frac{6\,b^3\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^2\,(a^2+b^2)\,d^4}-$$
$$\frac{3\,b^3\,f^3\,\text{PolyLog}\left[4,\,-e^{2\,(c+d\,x)}\right]}{4\,a^2\,(a^2+b^2)\,d^4}+\frac{3\,b\,f^3\,\text{PolyLog}\left[4,\,-e^{2\,c+2\,d\,x}\right]}{4\,a^2\,d^4}-\frac{3\,b\,f^3\,\text{PolyLog}\left[4,\,e^{2\,c+2\,d\,x}\right]}{4\,a^2\,d^4}$$

Result (type 4, 4187 leaves):

$$\frac{1}{4\,(a^2+b^2)\,d^4\,(1+e^{2\,c})}$$
$$\Big(-8\,b\,d^4\,e^3\,e^{2\,c}\,x-12\,b\,d^4\,e^2\,e^{2\,c}\,f\,x^2-8\,b\,d^4\,e\,e^{2\,c}\,f^2\,x^3-2\,b\,d^4\,e^{2\,c}\,f^3\,x^4-8\,a\,d^3\,e^3\,\text{ArcTan}\left[e^{c+d\,x}\right]-$$
$$8\,a\,d^3\,e^3\,e^{2\,c}\,\text{ArcTan}\left[e^{c+d\,x}\right]-12\,i\,a\,d^3\,e^2\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-12\,i\,a\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-$$
$$12\,i\,a\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-12\,i\,a\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-$$
$$4\,i\,a\,d^3\,f^3\,x^3\,\text{Log}\left[1-i\,e^{c+d\,x}\right]-4\,i\,a\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1-i\,e^{c+d\,x}\right]+$$
$$12\,i\,a\,d^3\,e^2\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+12\,i\,a\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+$$
$$12\,i\,a\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+12\,i\,a\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+$$
$$4\,i\,a\,d^3\,f^3\,x^3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+4\,i\,a\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+i\,e^{c+d\,x}\right]+$$
$$4\,b\,d^3\,e^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+4\,b\,d^3\,e^3\,e^{2\,c}\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,b\,d^3\,e^2\,f\,x\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$12\,b\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,b\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$12\,b\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+4\,b\,d^3\,f^3\,x^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+$$
$$4\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]+12\,i\,a\,d^2\,(1+e^{2\,c})\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]-$$
$$12\,i\,a\,d^2\,(1+e^{2\,c})\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,i\,e^{c+d\,x}\right]+$$
$$6\,b\,d^2\,e^2\,f\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]+6\,b\,d^2\,e^2\,e^{2\,c}\,f\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]+$$
$$12\,b\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]+12\,b\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]+$$
$$6\,b\,d^2\,f^3\,x^2\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]+6\,b\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{PolyLog}\left[2,\,-e^{2\,(c+d\,x)}\right]-$$
$$24\,i\,a\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]-24\,i\,a\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]-$$
$$24\,i\,a\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]-24\,i\,a\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]+$$

$$24\,i\,a\,d\,e\,f^2\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]+24\,i\,a\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]+$$
$$24\,i\,a\,d\,f^3\,x\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]+24\,i\,a\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]-$$
$$6\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]-6\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]-$$
$$6\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]-6\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]+$$
$$24\,i\,a\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]+24\,i\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]-$$
$$24\,i\,a\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]-24\,i\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]+$$
$$3\,b\,f^3\,\text{PolyLog}\left[4,\,-e^{2\,(c+d\,x)}\right]+3\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,-e^{2\,(c+d\,x)}\right]\Big)+$$

$$\frac{1}{4\,a^2\,d^4\,\left(-1+e^{2\,c}\right)}\,\Big(8\,b\,d^4\,e^3\,e^{2\,c}\,x+12\,b\,d^4\,e^2\,e^{2\,c}\,f\,x^2+8\,b\,d^4\,e\,e^{2\,c}\,f^2\,x^3+2\,b\,d^4\,e^{2\,c}\,f^3\,x^4+$$
$$24\,a\,d^2\,e^2\,f\,\text{ArcTanh}\left[e^{c+d\,x}\right]-24\,a\,d^2\,e^2\,e^{2\,c}\,f\,\text{ArcTanh}\left[e^{c+d\,x}\right]-24\,a\,d^2\,e\,f^2\,x\,\text{Log}\left[1-e^{c+d\,x}\right]+$$
$$24\,a\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{Log}\left[1-e^{c+d\,x}\right]-12\,a\,d^2\,f^3\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]+12\,a\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{Log}\left[1-e^{c+d\,x}\right]+$$
$$24\,a\,d^2\,e\,f^2\,x\,\text{Log}\left[1+e^{c+d\,x}\right]-24\,a\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{Log}\left[1+e^{c+d\,x}\right]+$$
$$12\,a\,d^2\,f^3\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]-12\,a\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{Log}\left[1+e^{c+d\,x}\right]+4\,b\,d^3\,e^3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$4\,b\,d^3\,e^3\,e^{2\,c}\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]+12\,b\,d^3\,e^2\,f\,x\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$12\,b\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]+12\,b\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$12\,b\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]+4\,b\,d^3\,f^3\,x^3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-$$
$$4\,b\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]-24\,a\,d\,\left(-1+e^{2\,c}\right)\,f^2\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]+$$
$$24\,a\,d\,\left(-1+e^{2\,c}\right)\,f^2\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]+6\,b\,d^2\,e^2\,f\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-$$
$$6\,b\,d^2\,e^2\,e^{2\,c}\,f\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+12\,b\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-$$
$$12\,b\,d^2\,e\,e^{2\,c}\,f^2\,x\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]+6\,b\,d^2\,f^3\,x^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-$$
$$6\,b\,d^2\,e^{2\,c}\,f^3\,x^2\,\text{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-24\,a\,f^3\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+$$
$$24\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+24\,a\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-24\,a\,e^{2\,c}\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-$$
$$6\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b\,d\,e\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]-$$
$$6\,b\,d\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b\,d\,e^{2\,c}\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+$$
$$3\,b\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]-3\,b\,e^{2\,c}\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]\Big)-$$

$$\frac{1}{2\,a^2\,\left(a^2+b^2\right)\,d^4\,\left(-1+e^{2\,c}\right)}\,b^3\,\Bigg(4\,d^4\,e^3\,e^{2\,c}\,x+6\,d^4\,e^2\,e^{2\,c}\,f\,x^2+4\,d^4\,e\,e^{2\,c}\,f^2\,x^3+d^4\,e^{2\,c}\,f^3\,x^4+$$
$$2\,d^3\,e^3\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]-2\,d^3\,e^3\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$2\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e^2\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^3\,e\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$2\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-2\,d^3\,e^{2\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$

$$6\,d^2\left(-1+e^{2c}\right)f\left(e+f\,x\right)^2\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-6\,d^2\left(-1+e^{2c}\right)f\left(e+f\,x\right)^2$$
$$\text{PolyLog}\left[2,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,d\,e\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+12\,d\,e$$
$$e^{2c}f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,d\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$
$$12\,d\,e^{2c}f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,d\,e\,f^2$$
$$\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+12\,d\,e\,e^{2c}f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,d$$
$$f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+12\,d\,e^{2c}f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$
$$12\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,e^{2c}f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]+$$
$$\left.12\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]-12\,e^{2c}f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{\left(a^2+b^2\right)e^{2c}}}\right]\right)+$$
$$\frac{1}{8\,a\left(a^2+b^2\right)d}\left(-4\,a\,b\,d\,e^3\,x-6\,a\,b\,d\,e^2\,f\,x^2-4\,a\,b\,d\,e\,f^2\,x^3-a\,b\,d\,f^3\,x^4-4\,a^2\,e^3\,\text{Cosh}[c]-\right.$$
$$4\,b^2\,e^3\,\text{Cosh}[c]-12\,a^2\,e^2\,f\,x\,\text{Cosh}[c]-12\,b^2\,e^2\,f\,x\,\text{Cosh}[c]-12\,a^2\,e\,f^2\,x^2\,\text{Cosh}[c]-$$
$$\left.12\,b^2\,e\,f^2\,x^2\,\text{Cosh}[c]-4\,a^2\,f^3\,x^3\,\text{Cosh}[c]-4\,b^2\,f^3\,x^3\,\text{Cosh}[c]\right)$$
$$\text{Csch}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}\right]\text{Sech}[c]+\frac{1}{2\,a\,d}\text{Csch}\left[\frac{c}{2}\right]\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+$$
$$\frac{1}{2\,a\,d}\text{Sech}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(e^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)$$

Problem 468: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]}{\left(e+f\,x\right)\left(a+b\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]}{\left(e+f\,x\right)\left(a+b\,\text{Sinh}[c+d\,x]\right)},x\right]$$

Result (type 1, 1 leaves):

???

Problem 469: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Csch}[c+d x]^2 \operatorname{Sech}[c+d x]^2}{a+b \operatorname{Sinh}[c+d x]}\, dx$$

Optimal (type 4, 914 leaves, 51 steps):

$$-\frac{2 (e+f x)^2}{a d}+\frac{b^2 (e+f x)^2}{a (a^2+b^2) d}+\frac{4 b f (e+f x) \operatorname{ArcTan}[e^{c+d x}]}{a^2 d^2}-\frac{4 b^3 f (e+f x) \operatorname{ArcTan}[e^{c+d x}]}{a^2 (a^2+b^2) d^2}+$$
$$\frac{2 b (e+f x)^2 \operatorname{ArcTanh}[e^{c+d x}]}{a^2 d}-\frac{2 (e+f x)^2 \operatorname{Coth}[2 c+2 d x]}{a d}+\frac{b^4 (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 (a^2+b^2)^{3/2} d}-$$
$$\frac{b^4 (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 (a^2+b^2)^{3/2} d}-\frac{2 b^2 f (e+f x) \operatorname{Log}[1+e^{2 (c+d x)}]}{a (a^2+b^2) d^2}+\frac{2 f (e+f x) \operatorname{Log}[1-e^{4 (c+d x)}]}{a d^2}+$$
$$\frac{2 b f (e+f x) \operatorname{PolyLog}[2,-e^{c+d x}]}{a^2 d^2}-\frac{2 i b f^2 \operatorname{PolyLog}[2,-i e^{c+d x}]}{a^2 d^3}+\frac{2 i b^3 f^2 \operatorname{PolyLog}[2,-i e^{c+d x}]}{a^2 (a^2+b^2) d^3}+$$
$$\frac{2 i b f^2 \operatorname{PolyLog}[2,i e^{c+d x}]}{a^2 d^3}-\frac{2 i b^3 f^2 \operatorname{PolyLog}[2,i e^{c+d x}]}{a^2 (a^2+b^2) d^3}-\frac{2 b f (e+f x) \operatorname{PolyLog}[2,e^{c+d x}]}{a^2 d^2}+$$
$$\frac{2 b^4 f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 (a^2+b^2)^{3/2} d^2}-\frac{2 b^4 f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 (a^2+b^2)^{3/2} d^2}-$$
$$\frac{b^2 f^2 \operatorname{PolyLog}[2,-e^{2 (c+d x)}]}{a (a^2+b^2) d^3}+\frac{f^2 \operatorname{PolyLog}[2,e^{4 (c+d x)}]}{2 a d^3}-\frac{2 b f^2 \operatorname{PolyLog}[3,-e^{c+d x}]}{a^2 d^3}+$$
$$\frac{2 b f^2 \operatorname{PolyLog}[3,e^{c+d x}]}{a^2 d^3}-\frac{2 b^4 f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 (a^2+b^2)^{3/2} d^3}+\frac{2 b^4 f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 (a^2+b^2)^{3/2} d^3}-$$
$$\frac{b (e+f x)^2 \operatorname{Sech}[c+d x]}{a^2 d}+\frac{b^3 (e+f x)^2 \operatorname{Sech}[c+d x]}{a^2 (a^2+b^2) d}+\frac{b^2 (e+f x)^2 \operatorname{Tanh}[c+d x]}{a (a^2+b^2) d}$$

Result (type 4, 2972 leaves):

$$4 \left(-\left(\left(a f \left(d \left(d e^c x (2 e+f x)-2 (-i+e^c) (e+f x) \operatorname{Log}[1+i e^{c+d x}]\right)-\right.\right.\right.\right.$$
$$\left.\left.\left. 2 (-i+e^c) f \operatorname{PolyLog}[2,-i e^{c+d x}]\right)\right) \Big/ \left(4 (a^2+b^2) d^3 (-i+e^c)\right)\right)-$$
$$\left(a f \left(d \left(4 d e e^{2 c} x+2 d e^{2 c} f x^2+2 e (1+i e^{2 c}) \operatorname{ArcTan}[e^{c+d x}]-\right.\right.\right.$$
$$2 (-i+e^{2 c}) (e+f x) \operatorname{Log}[1-e^{c+d x}]+2 i f x \operatorname{Log}[1-i e^{c+d x}]-$$
$$\left. 2 e^{2 c} f x \operatorname{Log}[1-i e^{c+d x}]+i e \operatorname{Log}[1+e^{2 (c+d x)}]-e e^{2 c} \operatorname{Log}[1+e^{2 (c+d x)}]\right)-$$
$$\left.\left. 2 (-i+e^{2 c}) f \operatorname{PolyLog}[2,i e^{c+d x}]-2 (-i+e^{2 c}) f \operatorname{PolyLog}[2,e^{c+d x}]\right)\right) \Big/$$

$$\left(4\left(a^2+b^2\right) d^3\left(-\mathbb{i}+e^{2 c}\right)\right)-\frac{1}{4 a^2\left(a^2+b^2\right) d^3\left(-1+e^{2 c}\right)}$$

$$b \left(4 a b d^2 e\, e^{2 c} f x+2 a b d^2 e^{2 c} f^2 x^2+2 a^2 d^2 e^2 \text{ArcTanh}\left[e^{c+d x}\right]+2 b^2 d^2 e^2 \text{ArcTanh}\left[e^{c+d x}\right]-\right.$$
$$2 a^2 d^2 e^2 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]-2 b^2 d^2 e^2 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]-2 a^2 d^2 e f x \text{Log}\left[1-e^{c+d x}\right]-$$
$$2 b^2 d^2 e f x \text{Log}\left[1-e^{c+d x}\right]+2 a^2 d^2 e\, e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]+2 b^2 d^2 e\, e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]-$$
$$a^2 d^2 f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-b^2 d^2 f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+$$
$$b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+2 a^2 d^2 e f x \text{Log}\left[1+e^{c+d x}\right]+2 b^2 d^2 e f x \text{Log}\left[1+e^{c+d x}\right]-$$
$$2 a^2 d^2 e\, e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]-2 b^2 d^2 e\, e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]+a^2 d^2 f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+$$
$$b^2 d^2 f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+$$
$$2 a b d e f \text{Log}\left[1-e^{2 (c+d x)}\right]-2 a b d e\, e^{2 c} f \text{Log}\left[1-e^{2 (c+d x)}\right]+2 a b d f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$2 a b d\, e^{2 c} f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]-2\left(a^2+b^2\right) d\left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-e^{c+d x}\right]+$$
$$2\left(a^2+b^2\right) d\left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2, e^{c+d x}\right]+a b f^2 \text{PolyLog}\left[2, e^{2 (c+d x)}\right]-$$
$$a b\, e^{2 c} f^2 \text{PolyLog}\left[2, e^{2 (c+d x)}\right]-2 a^2 f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-2 b^2 f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+$$
$$2 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+2 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+2 a^2 f^2 \text{PolyLog}\left[3, e^{c+d x}\right]+$$
$$\left.2 b^2 f^2 \text{PolyLog}\left[3, e^{c+d x}\right]-2 a^2 e^{2 c} f^2 \text{PolyLog}\left[3, e^{c+d x}\right]-2 b^2 e^{2 c} f^2 \text{PolyLog}\left[3, e^{c+d x}\right]\right)+$$

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

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

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

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

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

$$\left(a e f \text{Sech}\left[\frac{c}{2}\right]\left(\text{Cosh}\left[\frac{c}{2}\right] \text{Log}\left[\text{Cosh}\left[\frac{c}{2}\right] \text{Cosh}\left[\frac{d x}{2}\right]+\text{Sinh}\left[\frac{c}{2}\right] \text{Sinh}\left[\frac{d x}{2}\right]\right]-\frac{1}{2} d x \text{Sinh}\left[\frac{c}{2}\right]\right)\right) \Big/$$
$$\left(2\left(a^2+b^2\right) d^2\left(\text{Cosh}\left[\frac{c}{2}\right]^2-\text{Sinh}\left[\frac{c}{2}\right]^2\right)\right)-$$

$$\left(a f^2 \text{Csch}\left[\frac{c}{2}\right]\left(-\frac{1}{4} d^2 e^{-\text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right]} x^2+\left(\mathbb{i} \text{Coth}\left[\frac{c}{2}\right]\left(-\frac{1}{2} d x\left(-\pi+2 \mathbb{i} \text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right]\right)-\right.\right.\right.\right.$$
$$\pi \text{Log}\left[1+e^{d x}\right]-2\left(\frac{\mathbb{i} d x}{2}+\mathbb{i} \text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right]\right) \text{Log}\left[1-e^{2 \mathbb{i}\left(\frac{\mathbb{i} d x}{2}+\mathbb{i} \text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right]\right)}\right]+$$
$$\pi \text{Log}\left[\text{Cosh}\left[\frac{d x}{2}\right]\right]+2 \mathbb{i} \text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right] \text{Log}\left[\mathbb{i} \text{Sinh}\left[\frac{d x}{2}+\text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right]\right]\right]+$$

$$\left.\left.\left.\left.\mathrm{i}\,\text{PolyLog}\left[2,\ e^{2\,\mathrm{i}\left(\frac{\mathrm{i}\,d\,x}{2}+\mathrm{i}\,\text{ArcTanh}\left[\text{Coth}\left[\frac{c}{2}\right]\right]\right)}\right]\right)\right)\right/\left(\sqrt{1-\text{Coth}\left[\frac{c}{2}\right]^2}\right)\right)$$

$$\left.\text{Sech}\left[\frac{c}{2}\right]\right)\Big/\left(2\left(a^2+b^2\right)d^3\sqrt{\text{Csch}\left[\frac{c}{2}\right]^2\left(-\text{Cosh}\left[\frac{c}{2}\right]^2+\text{Sinh}\left[\frac{c}{2}\right]^2\right)}\right)-$$

$$\left(e\,f\,x\,\text{Csch}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}\right]\left(a^2\,\text{Cosh}[c]-b^2\,\text{Cosh}[c]+a^2\,\text{Cosh}[2\,c]-\mathrm{i}\,a^2\,\text{Sinh}[c]-\mathrm{i}\,b^2\,\text{Sinh}[c]\right)\right)\Big/$$

$$\left(8\,a\left(a^2+b^2\right)d\left(\text{Cosh}\left[\frac{c}{2}\right]-\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}[c]+\mathrm{i}\,\text{Sinh}[c]\right)\right)-$$

$$\left(f^2\,x^2\,\text{Csch}\left[\frac{c}{2}\right]\text{Sech}\left[\frac{c}{2}\right]\left(a^2\,\text{Cosh}[c]-b^2\,\text{Cosh}[c]+a^2\,\text{Cosh}[2\,c]-\mathrm{i}\,a^2\,\text{Sinh}[c]-\mathrm{i}\,b^2\,\text{Sinh}[c]\right)\right)\Big/$$

$$\left(16\,a\left(a^2+b^2\right)d\left(\text{Cosh}\left[\frac{c}{2}\right]-\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}\left[\frac{c}{2}\right]+\mathrm{i}\,\text{Sinh}\left[\frac{c}{2}\right]\right)\left(\text{Cosh}[c]+\mathrm{i}\,\text{Sinh}[c]\right)\right)+$$

$$\frac{b\,e\,f\,\text{ArcTan}\left[\frac{\text{Sinh}[c]+\text{Cosh}[c]\,\text{Tanh}\left[\frac{d\,x}{2}\right]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right]}{\left(a^2+b^2\right)d^2\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}+$$

$$\frac{1}{2\left(a^2+b^2\right)d^3}$$

$$b\,f^2\left(-\frac{1}{\sqrt{1-\text{Coth}[c]^2}}\mathrm{i}\,\text{Csch}[c]\right.$$

$$\left(\mathrm{i}\left(d\,x+\text{ArcTanh}[\text{Coth}[c]]\right)\left(\text{Log}\left[1-e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]-\text{Log}\left[1+e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]\right)+\right.$$

$$\left.\mathrm{i}\left(\text{PolyLog}\left[2,\ -e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]-\text{PolyLog}\left[2,\ e^{-d\,x-\text{ArcTanh}[\text{Coth}[c]]}\right]\right)\right)-$$

$$\left.\frac{2\,\text{ArcTan}\left[\frac{\text{Sinh}[c]+\text{Cosh}[c]\,\text{Tanh}\left[\frac{d\,x}{2}\right]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right]\text{ArcTanh}[\text{Coth}[c]]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right)+\frac{1}{4\,a\left(a^2+b^2\right)d}\text{Csch}[2\,c]$$

$$\text{Csch}[2\,c+2\,d\,x]\left(a\,b\,e^2\,\text{Cosh}[c-d\,x]+2\,a\,b\,e\,f\,x\,\text{Cosh}[c-d\,x]+a\,b\,f^2\,x^2\,\text{Cosh}[c-d\,x]-\right.$$

$$a\,b\,e^2\,\text{Cosh}[3\,c+d\,x]-2\,a\,b\,e\,f\,x\,\text{Cosh}[3\,c+d\,x]-a\,b\,f^2\,x^2\,\text{Cosh}[3\,c+d\,x]-b^2\,e^2\,\text{Sinh}[2\,c]-$$

$$2\,b^2\,e\,f\,x\,\text{Sinh}[2\,c]-b^2\,f^2\,x^2\,\text{Sinh}[2\,c]+2\,a^2\,e^2\,\text{Sinh}[2\,d\,x]+b^2\,e^2\,\text{Sinh}[2\,d\,x]+$$

$$\left.\left.4\,a^2\,e\,f\,x\,\text{Sinh}[2\,d\,x]+2\,b^2\,e\,f\,x\,\text{Sinh}[2\,d\,x]+2\,a^2\,f^2\,x^2\,\text{Sinh}[2\,d\,x]+b^2\,f^2\,x^2\,\text{Sinh}[2\,d\,x]\right)\right)$$

Problem 470: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 499 leaves, 30 steps):

$$\frac{b f \text{ArcTan}[\text{Sinh}[c+d x]]}{a^2 d^2}-\frac{b^3 f \text{ArcTan}[\text{Sinh}[c+d x]]}{a^2 \left(a^2+b^2\right) d^2}+\frac{2 b f x \text{ArcTanh}\left[e^{c+d x}\right]}{a^2 d}-\frac{b f x \text{ArcTanh}[\text{Cosh}[c+d x]]}{a^2 d}+\frac{b (e+f x) \text{ArcTanh}[\text{Cosh}[c+d x]]}{a^2 d}-\frac{2 (e+f x) \text{Coth}[2 c+2 d x]}{a d}+\frac{b^4 (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \left(a^2+b^2\right)^{3/2} d}-\frac{b^4 (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \left(a^2+b^2\right)^{3/2} d}-\frac{b^2 f \text{Log}[\text{Cosh}[c+d x]]}{a \left(a^2+b^2\right) d^2}+\frac{f \text{Log}[\text{Sinh}[2 c+2 d x]]}{a d^2}+\frac{b f \text{PolyLog}\left[2,-e^{c+d x}\right]}{a^2 d^2}-\frac{b f \text{PolyLog}\left[2,e^{c+d x}\right]}{a^2 d^2}+\frac{b^4 f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^2 \left(a^2+b^2\right)^{3/2} d^2}-\frac{b^4 f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^2 \left(a^2+b^2\right)^{3/2} d^2}-\frac{b (e+f x) \text{Sech}[c+d x]}{a^2 d}+\frac{b^3 (e+f x) \text{Sech}[c+d x]}{a^2 \left(a^2+b^2\right) d}+\frac{b^2 (e+f x) \text{Tanh}[c+d x]}{a \left(a^2+b^2\right) d}$$

Result (type 4, 1994 leaves):

$$4 \left(-\frac{f (c+d x)}{8 (a+i b) d^2}+\left(i \left((2-i) a^3 d f+3 i a^2 b d f-i a b^2 d f+i b^3 d f+a^2 b c d f+i a b^2 c d f\right) (c+d x)\right) \Big/ \left(8 a (a+i b) \left(a^2+b^2\right) d^3\right)-\frac{i b f (c+d x)^2}{16 \left(a^2+b^2\right) d^2}+\frac{i f \text{ArcTan}\left[\frac{a \text{Cosh}\left[\frac{1}{2} (c+d x)\right]-b \text{Cosh}\left[\frac{1}{2} (c+d x)\right]+a \text{Sinh}\left[\frac{1}{2} (c+d x)\right]+b \text{Sinh}\left[\frac{1}{2} (c+d x)\right]}{a \text{Cosh}\left[\frac{1}{2} (c+d x)\right]+b \text{Cosh}\left[\frac{1}{2} (c+d x)\right]-a \text{Sinh}\left[\frac{1}{2} (c+d x)\right]+b \text{Sinh}\left[\frac{1}{2} (c+d x)\right]}\right]}{4 (a+i b) d^2}-\frac{a f \text{ArcTanh}\left[1-2 i \text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{2 \left(a^2+b^2\right) d^2}-\frac{b^2 f \text{ArcTanh}\left[1-2 i \text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{2 a \left(a^2+b^2\right) d^2}-\frac{b c f \text{ArcTanh}\left[1-2 i \text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{2 \left(a^2+b^2\right) d^2}+\frac{1}{8 a d^2}\left(-d e \text{Cosh}\left[\frac{1}{2} (c+d x)\right]+c f \text{Cosh}\left[\frac{1}{2} (c+d x)\right]-f (c+d x) \text{Cosh}\left[\frac{1}{2} (c+d x)\right]\right) \text{Csch}\left[\frac{1}{2} (c+d x)\right]+\frac{a f \text{Log}\left[\text{Cosh}\left[\frac{1}{2} (c+d x)\right]\right]}{4 \left(a^2+b^2\right) d^2}+\frac{b^2 f \text{Log}\left[\text{Cosh}\left[\frac{1}{2} (c+d x)\right]\right]}{4 a \left(a^2+b^2\right) d^2}-\frac{b c f \text{Log}\left[\text{Cosh}\left[\frac{1}{2} (c+d x)\right]\right]}{4 \left(a^2+b^2\right) d^2}+\frac{f \text{Log}[\text{Cosh}[c+d x]]}{8 (a+i b) d^2}+\frac{1}{4 \left(a^2+b^2\right) d^2}a f \left(-i (c+d x)+\right.\right.$$

$$2\,\text{ArcTanh}\left[1-2\,\text{i}\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\text{Log}[-1+\text{Cosh}[c+d\,x]+\text{i}\,\text{Sinh}[c+d\,x]]\Big)+$$

$$\frac{1}{8\,(a^2+b^2)\,d^2}\,\text{i}\,b\,f\,\Big(-\text{i}\,(c+d\,x)+2\,\text{ArcTanh}\left[1-2\,\text{i}\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$\text{Log}[-1+\text{Cosh}[c+d\,x]+\text{i}\,\text{Sinh}[c+d\,x]]\Big)+\frac{1}{8\,a\,(a^2+b^2)\,d^2}\,b^2\,f\,\Big(-\text{i}\,(c+d\,x)+$$

$$2\,\text{ArcTanh}\left[1-2\,\text{i}\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+\text{Log}[-1+\text{Cosh}[c+d\,x]+\text{i}\,\text{Sinh}[c+d\,x]]\Big)+$$

$$\frac{1}{8\,(a^2+b^2)\,d^2}\,b\,c\,f\,\Big(-\text{i}\,(c+d\,x)+2\,\text{ArcTanh}\left[1-2\,\text{i}\,\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$\text{Log}[-1+\text{Cosh}[c+d\,x]+\text{i}\,\text{Sinh}[c+d\,x]]\Big)-\frac{b\,e\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{4\,(a^2+b^2)\,d}-$$

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

$$\text{i}\,b\,f\,\left(-\frac{1}{8}\,\text{i}\,(c+d\,x)^2-\frac{1}{2}\,\text{i}\,(c+d\,x)\,\text{Log}\left[1+e^{-c-d\,x}\right]+\frac{1}{2}\,\text{i}\,\text{PolyLog}\left[2,\,-e^{-c-d\,x}\right]\right)-$$

$$\frac{1}{4\,(a^2+b^2)\,d^2}\,b\,f\,\Big(-\frac{1}{2}\,\text{i}\,(c+d\,x)^2+\frac{1}{4}\,\text{i}\,\Big(3\,\pi\,(c+d\,x)+(1-\text{i})\,(c+d\,x)^2+\pi\,\text{Log}[2]+$$

$$2\,(\pi-2\,\text{i}\,(c+d\,x))\,\text{Log}\left[1+\text{i}\,e^{-c-d\,x}\right]-4\,\pi\,\text{Log}\left[1+e^{c+d\,x}\right]+4\,\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-$$

$$2\,\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{i}\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+4\,\text{i}\,\text{PolyLog}\left[2,\,-\text{i}\,e^{-c-d\,x}\right]\Big)\Big)-$$

$$\frac{1}{4\,(a^2+b^2)\,d^2}\,\text{i}\,b\,f\,\Big(\frac{1}{4}\,(c+d\,x)^2+\frac{1}{4}\,\Big(-3\,\pi\,(c+d\,x)-(1-\text{i})\,(c+d\,x)^2-\pi\,\text{Log}[2]-$$

$$2\,(\pi-2\,\text{i}\,(c+d\,x))\,\text{Log}\left[1+\text{i}\,e^{-c-d\,x}\right]+4\,\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-4\,\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$2\,\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{i}\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-4\,\text{i}\,\text{PolyLog}\left[2,\,-\text{i}\,e^{-c-d\,x}\right]\Big)-$$

$$\frac{1}{2}\,\text{i}\,\left(\frac{1}{2}\,(c+d\,x)\,\left(c+d\,x+4\,\text{Log}\left[1-e^{-c-d\,x}\right]\right)-2\,\text{PolyLog}\left[2,\,e^{-c-d\,x}\right]\right)\Big)+$$

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

$$\text{i}\,\left(\text{PolyLog}\left[2,\,-e^{-c-d\,x}\right]-\text{PolyLog}\left[2,\,e^{-c-d\,x}\right]\right)\Big)-$$

$$\frac{1}{4\,a^2\,\left(-\left(a^2+b^2\right)^2\right)^{3/2}\,d^2}\,b^4\,(a^2+b^2)\,\Big(2\,\sqrt{a^2+b^2}\,d\,e\,\text{ArcTan}\left[\frac{a+b\,\text{Cosh}[c+d\,x]+b\,\text{Sinh}[c+d\,x]}{\sqrt{-a^2-b^2}}\right]-$$

$$2\,\sqrt{a^2+b^2}\,c\,f\,\text{ArcTan}\left[\frac{a+b\,\text{Cosh}[c+d\,x]+b\,\text{Sinh}[c+d\,x]}{\sqrt{-a^2-b^2}}\right]+$$

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

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

$$\sqrt{-a^2-b^2}\ f\,\text{PolyLog}\left[2,\frac{b\left(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]\right)}{-a+\sqrt{a^2+b^2}}\right]-$$
$$\left.\sqrt{-a^2-b^2}\ f\,\text{PolyLog}\left[2,-\frac{b\left(\text{Cosh}[c+d\,x]+\text{Sinh}[c+d\,x]\right)}{a+\sqrt{a^2+b^2}}\right]\right)+\frac{1}{8\,a\,d^2}\text{Sech}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$
$$\left(-d\,e\,\text{Sinh}\left[\frac{1}{2}\left(c+d\,x\right)\right]+c\,f\,\text{Sinh}\left[\frac{1}{2}\left(c+d\,x\right)\right]-f\left(c+d\,x\right)\text{Sinh}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)+$$
$$\frac{1}{4\left(a^2+b^2\right)d^2}\text{Sech}[c+d\,x]\left(-b\,d\,e+b\,c\,f-b\,f\left(c+d\,x\right)-a\,d\,e\,\text{Sinh}[c+d\,x]+\right.$$
$$\left.a\,c\,f\,\text{Sinh}[c+d\,x]-a\,f\left(c+d\,x\right)\text{Sinh}[c+d\,x]\right)$$

Problem 472: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]^2}{\left(e+f\,x\right)\left(a+b\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]^2}{\left(e+f\,x\right)\left(a+b\,\text{Sinh}[c+d\,x]\right)},x\right]$$

Result (type 1, 1 leaves):

???

Problem 475: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]^3}{\left(e+f\,x\right)\left(a+b\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^2\,\text{Sech}[c+d\,x]^3}{\left(e+f\,x\right)\left(a+b\,\text{Sinh}[c+d\,x]\right)},x\right]$$

Result (type 1, 1 leaves):

???

Problem 476: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(e+f\,x\right)^3\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 752 leaves, 34 steps):

$$-\frac{3 f (e+f x)^2}{2 a d^2}+\frac{6 b f (e+f x)^2 \text{ArcTanh}\left[e^{c+d x}\right]}{a^2 d^2}-\frac{3 f (e+f x)^2 \text{Coth}[c+d x]}{2 a d^2}+\frac{b (e+f x)^3 \text{Csch}[c+d x]}{a^2 d}-\frac{(e+f x)^3 \text{Csch}[c+d x]^2}{2 a d}-\frac{b^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d}-\frac{b^2 (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d}+\frac{3 f^2 (e+f x) \text{Log}\left[1-e^{2 (c+d x)}\right]}{a d^3}+\frac{b^2 (e+f x)^3 \text{Log}\left[1-e^{2 (c+d x)}\right]}{a^3 d}+\frac{6 b f^2 (e+f x) \text{PolyLog}\left[2,-e^{c+d x}\right]}{a^2 d^3}-\frac{6 b f^2 (e+f x) \text{PolyLog}\left[2,e^{c+d x}\right]}{a^2 d^3}-\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^2}-\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^2}+\frac{3 f^3 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{2 a d^4}+\frac{3 b^2 f (e+f x)^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{2 a^3 d^2}-\frac{6 b f^3 \text{PolyLog}\left[3,-e^{c+d x}\right]}{a^2 d^4}+\frac{6 b f^3 \text{PolyLog}\left[3,e^{c+d x}\right]}{a^2 d^4}+\frac{6 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^3}+\frac{6 b^2 f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^3}-\frac{3 b^2 f^2 (e+f x) \text{PolyLog}\left[3,e^{2 (c+d x)}\right]}{2 a^3 d^3}-\frac{6 b^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^4}-\frac{6 b^2 f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^4}+\frac{3 b^2 f^3 \text{PolyLog}\left[4,e^{2 (c+d x)}\right]}{4 a^3 d^4}$$

Result (type 4, 3115 leaves):

$$\frac{b (e+f x)^3 \text{Csch}[c]}{a^2 d}+\frac{\left(-e^3-3 e^2 f x-3 e f^2 x^2-f^3 x^3\right) \text{Csch}\left[\frac{c}{2}+\frac{d x}{2}\right]^2}{8 a d}-\frac{1}{4 a^3 d^4 \left(-1+e^{2 c}\right)}$$
$$\Big(8 b^2 d^4 e^3 e^{2 c} x+24 a^2 d^2 e e^{2 c} f^2 x+12 b^2 d^4 e^2 e^{2 c} f x^2+12 a^2 d^2 e^{2 c} f^3 x^2+8 b^2 d^4 e e^{2 c} f^2 x^3+$$
$$2 b^2 d^4 e^{2 c} f^3 x^4+24 a b d^2 e^2 f \text{ArcTanh}\left[e^{c+d x}\right]-24 a b d^2 e^2 e^{2 c} f \text{ArcTanh}\left[e^{c+d x}\right]-$$
$$24 a b d^2 e f^2 x \text{Log}\left[1-e^{c+d x}\right]+24 a b d^2 e e^{2 c} f^2 x \text{Log}\left[1-e^{c+d x}\right]-$$
$$12 a b d^2 f^3 x^2 \text{Log}\left[1-e^{c+d x}\right]+12 a b d^2 e^{2 c} f^3 x^2 \text{Log}\left[1-e^{c+d x}\right]+24 a b d^2 e f^2 x \text{Log}\left[1+e^{c+d x}\right]-$$
$$24 a b d^2 e e^{2 c} f^2 x \text{Log}\left[1+e^{c+d x}\right]+12 a b d^2 f^3 x^2 \text{Log}\left[1+e^{c+d x}\right]-$$
$$12 a b d^2 e^{2 c} f^3 x^2 \text{Log}\left[1+e^{c+d x}\right]+4 b^2 d^3 e^3 \text{Log}\left[1-e^{2 (c+d x)}\right]-4 b^2 d^3 e^3 e^{2 c} \text{Log}\left[1-e^{2 (c+d x)}\right]+$$
$$12 a^2 d e f^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-12 a^2 d e e^{2 c} f^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+12 b^2 d^3 e^2 f x \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 b^2 d^3 e^2 e^{2 c} f x \text{Log}\left[1-e^{2 (c+d x)}\right]+12 a^2 d f^3 x \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 a^2 d e^{2 c} f^3 x \text{Log}\left[1-e^{2 (c+d x)}\right]+12 b^2 d^3 e f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 b^2 d^3 e e^{2 c} f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+4 b^2 d^3 f^3 x^3 \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$4 b^2 d^3 e^{2 c} f^3 x^3 \text{Log}\left[1-e^{2 (c+d x)}\right]-24 a b d \left(-1+e^{2 c}\right) f^2 (e+f x) \text{PolyLog}\left[2,-e^{c+d x}\right]+$$
$$24 a b d \left(-1+e^{2 c}\right) f^2 (e+f x) \text{PolyLog}\left[2,e^{c+d x}\right]+6 b^2 d^2 e^2 f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$6 b^2 d^2 e^2 e^{2 c} f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 a^2 f^3 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$6 a^2 e^{2 c} f^3 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+12 b^2 d^2 e f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$12 b^2 d^2 e e^{2 c} f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 b^2 d^2 f^3 x^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$6 b^2 d^2 e^{2 c} f^3 x^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-24 a b f^3 \text{PolyLog}\left[3,-e^{c+d x}\right]+$$

$24\,a\,b\,e^{2c}\,f^3\,\text{PolyLog}\left[3,\,-e^{c+d\,x}\right]+24\,a\,b\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-24\,a\,b\,e^{2c}\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]-$
$6\,b^2\,d\,e\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b^2\,d\,e\,e^{2c}\,f^2\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]-$
$6\,b^2\,d\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+6\,b^2\,d\,e^{2c}\,f^3\,x\,\text{PolyLog}\left[3,\,e^{2\,(c+d\,x)}\right]+$
$3\,b^2\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]-3\,b^2\,e^{2c}\,f^3\,\text{PolyLog}\left[4,\,e^{2\,(c+d\,x)}\right]\Big)+$

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

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

$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-6\,d^3\,e^2\,e^{2c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-6\,d^3\,e\,e^{2c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

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

$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-6\,d^3\,e^2\,e^{2c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

$6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-6\,d^3\,e\,e^{2c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

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

$6\,d^2\,\left(-1+e^{2c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-6\,d^2\,\left(-1+e^{2c}\right)\,f\,\left(e+f\,x\right)^2$

$\text{PolyLog}\left[2,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-12\,d\,e\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+12\,d\,e$

$e^{2c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-12\,d\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

$12\,d\,e^{2c}\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-12\,d\,e\,f^2$

$\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+12\,d\,e\,e^{2c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-12\,d$

$f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+12\,d\,e^{2c}\,f^3\,x\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

$12\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]-12\,e^{2c}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{2c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2c}}}\right]+$

$$12\, f^3\, \text{PolyLog}\left[4, -\frac{b\, e^{2\, c+d\, x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\, c}}}\right]-12\, e^{2\, c}\, f^3\, \text{PolyLog}\left[4, -\frac{b\, e^{2\, c+d\, x}}{a\, e^c+\sqrt{\left(a^2+b^2\right)\, e^{2\, c}}}\right]\Bigg)+$$

$$\frac{\left(e^3+3\, e^2\, f\, x+3\, e\, f^2\, x^2+f^3\, x^3\right)\, \text{Sech}\left[\frac{c}{2}+\frac{d\, x}{2}\right]^2}{8\, a\, d}+$$

$$\frac{1}{4\, a^2\, d^2}$$

$$\text{Sech}\left[\frac{c}{2}\right]\, \text{Sech}\left[\frac{c}{2}+\frac{d\, x}{2}\right]$$

$$\left(-2\, b\, d\, e^3\, \text{Sinh}\left[\frac{d\, x}{2}\right]-3\, a\, e^2\, f\, \text{Sinh}\left[\frac{d\, x}{2}\right]-6\, b\, d\, e^2\, f\, x\, \text{Sinh}\left[\frac{d\, x}{2}\right]-6\, a\, e\, f^2\, x\, \text{Sinh}\left[\frac{d\, x}{2}\right]-\right.$$

$$\left.6\, b\, d\, e\, f^2\, x^2\, \text{Sinh}\left[\frac{d\, x}{2}\right]-3\, a\, f^3\, x^2\, \text{Sinh}\left[\frac{d\, x}{2}\right]-2\, b\, d\, f^3\, x^3\, \text{Sinh}\left[\frac{d\, x}{2}\right]\right)+\frac{1}{4\, a^2\, d^2}$$

$$\text{Csch}\left[\frac{c}{2}\right]\, \text{Csch}\left[\frac{c}{2}+\frac{d\, x}{2}\right]\, \left(-2\, b\, d\, e^3\, \text{Sinh}\left[\frac{d\, x}{2}\right]+3\, a\, e^2\, f\, \text{Sinh}\left[\frac{d\, x}{2}\right]-6\, b\, d\, e^2\, f\, x\, \text{Sinh}\left[\frac{d\, x}{2}\right]+\right.$$

$$\left.6\, a\, e\, f^2\, x\, \text{Sinh}\left[\frac{d\, x}{2}\right]-6\, b\, d\, e\, f^2\, x^2\, \text{Sinh}\left[\frac{d\, x}{2}\right]+3\, a\, f^3\, x^2\, \text{Sinh}\left[\frac{d\, x}{2}\right]-2\, b\, d\, f^3\, x^3\, \text{Sinh}\left[\frac{d\, x}{2}\right]\right)$$

Problem 477: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\, x)^2\, \text{Coth}[c+d\, x]\, \text{Csch}[c+d\, x]^2}{a+b\, \text{Sinh}[c+d\, x]}\, dx$$

Optimal (type 4, 502 leaves, 26 steps):

$$\frac{4\, b\, f\, (e+f\, x)\, \text{ArcTanh}\left[e^{c+d\, x}\right]}{a^2\, d^2}-\frac{f\, (e+f\, x)\, \text{Coth}[c+d\, x]}{a\, d^2}+\frac{b\, (e+f\, x)^2\, \text{Csch}[c+d\, x]}{a^2\, d}-$$

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

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

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

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

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

Result (type 4, 1550 leaves):

$$\frac{b\,(e+f\,x)^2\,\text{Csch}[c]}{a^2\,d}+\frac{\left(-e^2-2\,e\,f\,x-f^2\,x^2\right)\,\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2}{8\,a\,d}-\frac{1}{6\,a^3\,d^3\,\left(-1+e^{2\,c}\right)}$$

$$\Big(12\,d\,e^{2\,c}\,\left(b^2\,d^2\,e^2+a^2\,f^2\right)\,x-12\,d\,\left(-1+e^{2\,c}\right)\,\left(b^2\,d^2\,e^2+a^2\,f^2\right)\,x+12\,b^2\,d^3\,e\,f\,x^2+4\,b^2\,d^3\,f^2\,x^3-$$
$$24\,a\,b\,d\,e\,\left(-1+e^{2\,c}\right)\,f\,\text{ArcTanh}\left[e^{c+d\,x}\right]+6\,b^2\,d^2\,e^2\,\left(-1+e^{2\,c}\right)\,\left(2\,d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)+$$
$$6\,a^2\,\left(-1+e^{2\,c}\right)\,f^2\,\left(2\,d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)+12\,a\,b\,\left(-1+e^{2\,c}\right)\,f^2$$
$$\left(d\,x\,\left(\text{Log}\left[1-e^{c+d\,x}\right]-\text{Log}\left[1+e^{c+d\,x}\right]\right)-\text{PolyLog}\left[2,-e^{c+d\,x}\right]+\text{PolyLog}\left[2,e^{c+d\,x}\right]\right)+$$
$$6\,b^2\,d\,e\,\left(-1+e^{2\,c}\right)\,f\,\left(2\,d\,x\,\left(d\,x-\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]\right)+b^2\,\left(-1+e^{2\,c}\right)$$
$$f^2\,\left(2\,d^2\,x^2\,\left(2\,d\,x-3\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]\right)-6\,d\,x\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]+3\,\text{PolyLog}\left[3,e^{2\,(c+d\,x)}\right]\right)\Big)+$$

$$\frac{1}{3\,a^3\,d^3\,\left(-1+e^{2\,c}\right)}\,b^2\,\Bigg(6\,d^3\,e^2\,e^{2\,c}\,x+6\,d^3\,e\,e^{2\,c}\,f\,x^2+2\,d^3\,e^{2\,c}\,f^2\,x^3+$$
$$3\,d^2\,e^2\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]-3\,d^2\,e^2\,e^{2\,c}\,\text{Log}\left[2\,a\,e^{c+d\,x}+b\,\left(-1+e^{2\,(c+d\,x)}\right)\right]+$$
$$6\,d^2\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$6\,d^2\,e\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-6\,d^2\,e\,e^{2\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+$$
$$3\,d^2\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-3\,d^2\,e^{2\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)+$$

$$\frac{\left(e^2+2\,e\,f\,x+f^2\,x^2\right)\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2}{8\,a\,d}+\frac{1}{2\,a^2\,d^2}\text{Sech}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(-b\,d\,e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-a\,e\,f\,\text{Sinh}\left[\frac{d\,x}{2}\right]-2\,b\,d\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-\right.$$
$$\left.a\,f^2\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-b\,d\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+\frac{1}{2\,a^2\,d^2}\text{Csch}\left[\frac{c}{2}\right]\,\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(-b\,d\,e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+a\,e\,f\,\text{Sinh}\left[\frac{d\,x}{2}\right]-2\,b\,d\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+a\,f^2\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-b\,d\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)$$

Problem 478: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)\, \mathrm{Coth}[c+d x]\, \mathrm{Csch}[c+d x]^2}{a+b\, \mathrm{Sinh}[c+d x]}\, dx$$

Optimal (type 4, 298 leaves, 19 steps):

$$\frac{b f \mathrm{ArcTanh}[\mathrm{Cosh}[c+d x]]}{a^2 d^2}-\frac{f \mathrm{Coth}[c+d x]}{2 a d^2}+\frac{b (e+f x) \mathrm{Csch}[c+d x]}{a^2 d}-\frac{(e+f x) \mathrm{Csch}[c+d x]^2}{2 a d}-\frac{b^2 (e+f x) \mathrm{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d}-\frac{b^2 (e+f x) \mathrm{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d}+\frac{b^2 (e+f x) \mathrm{Log}\left[1-e^{2 (c+d x)}\right]}{a^3 d}-\frac{b^2 f \mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^2}-\frac{b^2 f \mathrm{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^2}+\frac{b^2 f \mathrm{PolyLog}\left[2,e^{2 (c+d x)}\right]}{2 a^3 d^2}$$

Result (type 4, 851 leaves):

$$\frac{1}{4 a^2 d^2}\left(2 b d e \mathrm{Cosh}\left[\frac{1}{2} (c+d x)\right]-a f \mathrm{Cosh}\left[\frac{1}{2} (c+d x)\right]-2 b c f \mathrm{Cosh}\left[\frac{1}{2} (c+d x)\right]+2 b f (c+d x) \mathrm{Cosh}\left[\frac{1}{2} (c+d x)\right]\right) \mathrm{Csch}\left[\frac{1}{2} (c+d x)\right]+\frac{(-d e+c f-f (c+d x)) \mathrm{Csch}\left[\frac{1}{2} (c+d x)\right]^2}{8 a d^2}+\frac{b^2 e \mathrm{Log}[\mathrm{Sinh}[c+d x]]}{a^3 d}-\frac{b^2 c f \mathrm{Log}[\mathrm{Sinh}[c+d x]]}{a^3 d^2}-\frac{b^2 e \mathrm{Log}\left[1+\frac{b \mathrm{Sinh}[c+d x]}{a}\right]}{a^3 d}+\frac{b^2 c f \mathrm{Log}\left[1+\frac{b \mathrm{Sinh}[c+d x]}{a}\right]}{a^3 d^2}-\frac{b f \mathrm{Log}\left[\mathrm{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{a^2 d^2}-\frac{1}{a^3 d^2} i b^2 f \left(i (c+d x) \mathrm{Log}\left[1-e^{-2 (c+d x)}\right]-\frac{1}{2} i \left(-(c+d x)^2+\mathrm{PolyLog}\left[2,e^{-2 (c+d x)}\right]\right)\right)-\frac{1}{a^3 d^2} b^3 f \left(\frac{(c+d x) \mathrm{Log}[a+b \mathrm{Sinh}[c+d x]]}{b}-\frac{1}{b} i \left(\frac{1}{2} i \left(\frac{\pi}{2}-i (c+d x)\right)^2-4 i \mathrm{ArcSin}\left[\frac{\sqrt{\frac{i (a-i b)}{b}}}{\sqrt{2}}\right] \mathrm{ArcTan}\left[\frac{(a+i b) \mathrm{Tan}\left[\frac{1}{2}\left(\frac{\pi}{2}-i (c+d x)\right)\right]}{\sqrt{a^2+b^2}}\right]-\left(\frac{\pi}{2}-i (c+d x)+2 \mathrm{ArcSin}\left[\frac{\sqrt{\frac{i (a-i b)}{b}}}{\sqrt{2}}\right]\right)\right.\right.$$

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

$$\text{Log}\left[1+\frac{i\left(a+\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i\,(c+d\,x)\right)}}{b}\right]+\left(\frac{\pi}{2}-i\,(c+d\,x)\right)\text{Log}[a+b\,\text{Sinh}[c+d\,x]]+$$

$$i\left(\text{PolyLog}\left[2,-\frac{i\left(a-\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i\,(c+d\,x)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{i\left(a+\sqrt{a^2+b^2}\right)e^{i\left(\frac{\pi}{2}-i\,(c+d\,x)\right)}}{b}\right]\right)\right)\right)+$$

$$\frac{(d\,e-c\,f+f\,(c+d\,x))\,\text{Sech}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{8\,a\,d^2}+\frac{1}{4\,a^2\,d^2}\text{Sech}\left[\frac{1}{2}\,(c+d\,x)\right]$$

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

$$\left.2\,b\,c\,f\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]-2\,b\,f\,(c+d\,x)\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

Problem 480: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 481: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]^2\,\text{Csch}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1038 leaves, 67 steps):

$$\frac{b\,(e+f x)^3}{a^2 d}-\frac{6 f^2 (e+f x)\,\text{ArcTanh}\left[e^{c+d x}\right]}{a d^3}-\frac{(e+f x)^3\,\text{ArcTanh}\left[e^{c+d x}\right]}{a d}-$$
$$\frac{2 b^2 (e+f x)^3\,\text{ArcTanh}\left[e^{c+d x}\right]}{a^3 d}+\frac{b\,(e+f x)^3\,\text{Coth}[c+d x]}{a^2 d}-\frac{3 f\,(e+f x)^2\,\text{Csch}[c+d x]}{2 a d^2}-$$
$$\frac{(e+f x)^3\,\text{Coth}[c+d x]\,\text{Csch}[c+d x]}{2 a d}-\frac{b\sqrt{a^2+b^2}\,(e+f x)^3\,\text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d}+$$
$$\frac{b\sqrt{a^2+b^2}\,(e+f x)^3\,\text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d}-\frac{3 b f\,(e+f x)^2\,\text{Log}\left[1-e^{2 (c+d x)}\right]}{a^2 d^2}-$$
$$\frac{3 f^3\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{a d^4}-\frac{3 f\,(e+f x)^2\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{2 a d^2}-$$
$$\frac{3 b^2 f\,(e+f x)^2\,\text{PolyLog}\left[2,-e^{c+d x}\right]}{a^3 d^2}+\frac{3 f^3\,\text{PolyLog}\left[2,e^{c+d x}\right]}{a d^4}+\frac{3 f\,(e+f x)^2\,\text{PolyLog}\left[2,e^{c+d x}\right]}{2 a d^2}+$$
$$\frac{3 b^2 f\,(e+f x)^2\,\text{PolyLog}\left[2,e^{c+d x}\right]}{a^3 d^2}-\frac{3 b\sqrt{a^2+b^2}\,f\,(e+f x)^2\,\text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^2}+$$
$$\frac{3 b\sqrt{a^2+b^2}\,f\,(e+f x)^2\,\text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^2}-\frac{3 b f^2 (e+f x)\,\text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{a^2 d^3}+$$
$$\frac{3 f^2 (e+f x)\,\text{PolyLog}\left[3,-e^{c+d x}\right]}{a d^3}+\frac{6 b^2 f^2 (e+f x)\,\text{PolyLog}\left[3,-e^{c+d x}\right]}{a^3 d^3}-$$
$$\frac{3 f^2 (e+f x)\,\text{PolyLog}\left[3,e^{c+d x}\right]}{a d^3}-\frac{6 b^2 f^2 (e+f x)\,\text{PolyLog}\left[3,e^{c+d x}\right]}{a^3 d^3}+$$
$$\frac{6 b\sqrt{a^2+b^2}\,f^2 (e+f x)\,\text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^3}-\frac{6 b\sqrt{a^2+b^2}\,f^2 (e+f x)\,\text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^3}+$$
$$\frac{3 b f^3\,\text{PolyLog}\left[3,e^{2 (c+d x)}\right]}{2 a^2 d^4}-\frac{3 f^3\,\text{PolyLog}\left[4,-e^{c+d x}\right]}{a d^4}-$$
$$\frac{6 b^2 f^3\,\text{PolyLog}\left[4,-e^{c+d x}\right]}{a^3 d^4}+\frac{3 f^3\,\text{PolyLog}\left[4,e^{c+d x}\right]}{a d^4}+\frac{6 b^2 f^3\,\text{PolyLog}\left[4,e^{c+d x}\right]}{a^3 d^4}-$$
$$\frac{6 b\sqrt{a^2+b^2}\,f^3\,\text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^4}+\frac{6 b\sqrt{a^2+b^2}\,f^3\,\text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^4}$$

Result (type 4, 2724 leaves):

$$\frac{e^3\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{2 a d}+\frac{b^2 e^3\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^3 d}+\frac{3 e f^2\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a d^3}+\frac{1}{2 a d^2}$$
$$3 e^2 f\left(-c\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]-i\left((i c+i d x)\left(\text{Log}\left[1-e^{i (i c+i d x)}\right]-\text{Log}\left[1+e^{i (i c+i d x)}\right]\right)+\right.\right.$$
$$\left.\left.i\left(\text{PolyLog}\left[2,-e^{i (i c+i d x)}\right]-\text{PolyLog}\left[2,e^{i (i c+i d x)}\right]\right)\right)\right)+\frac{1}{a^3 d^2}$$

$$3 b^2 e^2 f \left(-c \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right] - i \left((i c + i d x)\left(\operatorname{Log}\left[1-e^{i(i c+i d x)}\right] - \operatorname{Log}\left[1+e^{i(i c+i d x)}\right]\right) + i \left(\operatorname{PolyLog}\left[2, -e^{i(i c+i d x)}\right] - \operatorname{PolyLog}\left[2, e^{i(i c+i d x)}\right]\right)\right)\right) + \frac{1}{a d^4}$$

$$3 f^3 \left(-c \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right] - i \left((i c + i d x)\left(\operatorname{Log}\left[1-e^{i(i c+i d x)}\right] - \operatorname{Log}\left[1+e^{i(i c+i d x)}\right]\right) + i \left(\operatorname{PolyLog}\left[2, -e^{i(i c+i d x)}\right] - \operatorname{PolyLog}\left[2, e^{i(i c+i d x)}\right]\right)\right)\right) +$$

$$\frac{1}{4 a^2 d^4} b e^{-c} f^3 \operatorname{Csch}[c] \left(2 d^2 x^2 \left(2 d e^{2c} x - 3\left(-1+e^{2c}\right) \operatorname{Log}\left[1-e^{2(c+d x)}\right]\right) - 6 d \left(-1+e^{2c}\right) x \operatorname{PolyLog}\left[2, e^{2(c+d x)}\right] + 3\left(-1+e^{2c}\right) \operatorname{PolyLog}\left[3, e^{2(c+d x)}\right]\right) - \frac{1}{a d^3}$$

$$3 e f^2 \left(d^2 x^2 \operatorname{ArcTanh}[\operatorname{Cosh}[c+d x] + \operatorname{Sinh}[c+d x]] + d x \operatorname{PolyLog}[2, -\operatorname{Cosh}[c+d x] - \operatorname{Sinh}[c+d x]] - d x \operatorname{PolyLog}[2, \operatorname{Cosh}[c+d x] + \operatorname{Sinh}[c+d x]] - \operatorname{PolyLog}[3, -\operatorname{Cosh}[c+d x] - \operatorname{Sinh}[c+d x]] + \operatorname{PolyLog}[3, \operatorname{Cosh}[c+d x] + \operatorname{Sinh}[c+d x]]\right) -$$

$$\frac{1}{a^3 d^3} 6 b^2 e f^2 \left(d^2 x^2 \operatorname{ArcTanh}[\operatorname{Cosh}[c+d x] + \operatorname{Sinh}[c+d x]] + d x \operatorname{PolyLog}[2, -\operatorname{Cosh}[c+d x] - \operatorname{Sinh}[c+d x]] - d x \operatorname{PolyLog}[2, \operatorname{Cosh}[c+d x] + \operatorname{Sinh}[c+d x]] - \operatorname{PolyLog}[3, -\operatorname{Cosh}[c+d x] - \operatorname{Sinh}[c+d x]] + \operatorname{PolyLog}[3, \operatorname{Cosh}[c+d x] + \operatorname{Sinh}[c+d x]]\right) +$$

$$\frac{1}{2 a d^4} f^3 \left(d^3 x^3 \operatorname{Log}\left[1-e^{c+d x}\right] - d^3 x^3 \operatorname{Log}\left[1+e^{c+d x}\right] - 3 d^2 x^2 \operatorname{PolyLog}\left[2, -e^{c+d x}\right] + 3 d^2 x^2 \operatorname{PolyLog}\left[2, e^{c+d x}\right] + 6 d x \operatorname{PolyLog}\left[3, -e^{c+d x}\right] - 6 d x \operatorname{PolyLog}\left[3, e^{c+d x}\right] - 6 \operatorname{PolyLog}\left[4, -e^{c+d x}\right] + 6 \operatorname{PolyLog}\left[4, e^{c+d x}\right]\right) +$$

$$\frac{1}{a^3 d^4} b^2 f^3 \left(d^3 x^3 \operatorname{Log}\left[1-e^{c+d x}\right] - d^3 x^3 \operatorname{Log}\left[1+e^{c+d x}\right] - 3 d^2 x^2 \operatorname{PolyLog}\left[2, -e^{c+d x}\right] + 3 d^2 x^2 \operatorname{PolyLog}\left[2, e^{c+d x}\right] + 6 d x \operatorname{PolyLog}\left[3, -e^{c+d x}\right] - 6 d x \operatorname{PolyLog}\left[3, e^{c+d x}\right] - 6 \operatorname{PolyLog}\left[4, -e^{c+d x}\right] + 6 \operatorname{PolyLog}\left[4, e^{c+d x}\right]\right) +$$

$$\frac{1}{a^3 d^4 \sqrt{\left(a^2+b^2\right) e^{2c}}} b \sqrt{-a^2-b^2} \left(2 d^3 e^3 \sqrt{\left(a^2+b^2\right) e^{2c}} \operatorname{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right] + \right.$$

$$3 \sqrt{-a^2-b^2} d^3 e^2 e^c f x \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] + 3 \sqrt{-a^2-b^2} d^3 e e^c f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] + \sqrt{-a^2-b^2} d^3 e^c f^3 x^3 \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] -$$

$$3 \sqrt{-a^2-b^2} d^3 e^2 e^c f x \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] - 3 \sqrt{-a^2-b^2} d^3 e e^c f^2 x^2 \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] - \sqrt{-a^2-b^2} d^3 e^c f^3 x^3 \operatorname{Log}\left[1+\frac{b e^{2c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] +$$

$$3 \sqrt{-a^2-b^2} d^2 e^c f (e+f x)^2 \operatorname{PolyLog}\left[2, -\frac{b e^{2c+d x}}{a e^c - \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] -$$

$$3 \sqrt{-a^2-b^2} d^2 e^c f (e+f x)^2 \operatorname{PolyLog}\left[2, -\frac{b e^{2c+d x}}{a e^c + \sqrt{\left(a^2+b^2\right) e^{2c}}}\right] -$$

$$6\sqrt{-a^2-b^2}\ d\,e\,e^c f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$6\sqrt{-a^2-b^2}\ d\,e^c f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\ d\,e\,e^c f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\ d\,e^c f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]+$$

$$6\sqrt{-a^2-b^2}\ e^c f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c-\sqrt{(a^2+b^2)\,e^{2c}}}\right]-$$

$$\left.6\sqrt{-a^2-b^2}\ e^c f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{2c+dx}}{a\,e^c+\sqrt{(a^2+b^2)\,e^{2c}}}\right]\right)+$$

$$\left(3\,b\,e^2\,f\,\text{Csch}[c]\,\left(-d\,x\,\text{Cosh}[c]+\text{Log}[\text{Cosh}[d\,x]\,\text{Sinh}[c]+\text{Cosh}[c]\,\text{Sinh}[d\,x]]\,\text{Sinh}[c]\right)\right)\Big/\left(a^2\,d^2\,\left(-\text{Cosh}[c]^2+\text{Sinh}[c]^2\right)\right)+$$

$$\frac{1}{4\,a^2\,d^2}\text{Csch}[c]\,\text{Csch}[c+d\,x]^2\,\left(2\,b\,d\,e^3\,\text{Cosh}[c]+6\,b\,d\,e^2\,f\,x\,\text{Cosh}[c]+\right.$$
$$6\,b\,d\,e\,f^2\,x^2\,\text{Cosh}[c]+2\,b\,d\,f^3\,x^3\,\text{Cosh}[c]+3\,a\,e^2\,f\,\text{Cosh}[d\,x]+6\,a\,e\,f^2\,x\,\text{Cosh}[d\,x]+$$
$$3\,a\,f^3\,x^2\,\text{Cosh}[d\,x]-3\,a\,e^2\,f\,\text{Cosh}[2\,c+d\,x]-6\,a\,e\,f^2\,x\,\text{Cosh}[2\,c+d\,x]-$$
$$3\,a\,f^3\,x^2\,\text{Cosh}[2\,c+d\,x]-2\,b\,d\,e^3\,\text{Cosh}[c+2\,d\,x]-6\,b\,d\,e^2\,f\,x\,\text{Cosh}[c+2\,d\,x]-$$
$$6\,b\,d\,e\,f^2\,x^2\,\text{Cosh}[c+2\,d\,x]-2\,b\,d\,f^3\,x^3\,\text{Cosh}[c+2\,d\,x]+a\,d\,e^3\,\text{Sinh}[d\,x]+$$
$$3\,a\,d\,e^2\,f\,x\,\text{Sinh}[d\,x]+3\,a\,d\,e\,f^2\,x^2\,\text{Sinh}[d\,x]+a\,d\,f^3\,x^3\,\text{Sinh}[d\,x]-a\,d\,e^3\,\text{Sinh}[2\,c+d\,x]-$$
$$\left.3\,a\,d\,e^2\,f\,x\,\text{Sinh}[2\,c+d\,x]-3\,a\,d\,e\,f^2\,x^2\,\text{Sinh}[2\,c+d\,x]-a\,d\,f^3\,x^3\,\text{Sinh}[2\,c+d\,x]\right)-$$

$$\left(3\,b\,e\,f^2\,\text{Csch}[c]\,\text{Sech}[c]\,\left(-d^2\,e^{-\text{ArcTanh}[\text{Tanh}[c]]}\,x^2+\frac{1}{\sqrt{1-\text{Tanh}[c]^2}}\right.\right.$$
$$i\,\left(-d\,x\,\left(-\pi+2\,i\,\text{ArcTanh}[\text{Tanh}[c]]\right)-\pi\,\text{Log}\left[1+e^{2\,d\,x}\right]-2\,\left(i\,d\,x+i\,\text{ArcTanh}[\text{Tanh}[c]]\right)\right.$$
$$\text{Log}\left[1-e^{2\,i\,(i\,d\,x+i\,\text{ArcTanh}[\text{Tanh}[c]])}\right]+\pi\,\text{Log}[\text{Cosh}[d\,x]]+2\,i\,\text{ArcTanh}[\text{Tanh}[c]]$$
$$\left.\text{Log}[i\,\text{Sinh}[d\,x+\text{ArcTanh}[\text{Tanh}[c]]]]+i\,\text{PolyLog}\left[2,e^{2\,i\,(i\,d\,x+i\,\text{ArcTanh}[\text{Tanh}[c]])}\right]\right)$$
$$\left.\left.\text{Tanh}[c]\right)\right)\Big/\left(a^2\,d^3\,\sqrt{\text{Sech}[c]^2\,\left(\text{Cosh}[c]^2-\text{Sinh}[c]^2\right)}\right)$$

Problem 482: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)^2\,\text{Coth}[c+d\,x]^2\,\text{Csch}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 714 leaves, 52 steps):

$$\frac{b\,(e+f\,x)^2}{a^2\,d}-\frac{(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{2\,b^2\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a^3\,d}-$$
$$\frac{f^2\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a\,d^3}+\frac{b\,(e+f\,x)^2\,\text{Coth}[c+d\,x]}{a^2\,d}-\frac{f\,(e+f\,x)\,\text{Csch}[c+d\,x]}{a\,d^2}-$$
$$\frac{(e+f\,x)^2\,\text{Coth}[c+d\,x]\,\text{Csch}[c+d\,x]}{2\,a\,d}-\frac{b\,\sqrt{a^2+b^2}\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,d}+$$
$$\frac{b\,\sqrt{a^2+b^2}\,(e+f\,x)^2\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,d}-\frac{2\,b\,f\,(e+f\,x)\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a^2\,d^2}-$$
$$\frac{f\,(e+f\,x)\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a\,d^2}-\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-e^{c+d\,x}\right]}{a^3\,d^2}+$$
$$\frac{f\,(e+f\,x)\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a\,d^2}+\frac{2\,b^2\,f\,(e+f\,x)\,\text{PolyLog}\left[2,e^{c+d\,x}\right]}{a^3\,d^2}-$$
$$\frac{2\,b\,\sqrt{a^2+b^2}\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,d^2}+\frac{2\,b\,\sqrt{a^2+b^2}\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,d^2}-$$
$$\frac{b\,f^2\,\text{PolyLog}\left[2,e^{2\,(c+d\,x)}\right]}{a^2\,d^3}+\frac{f^2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a\,d^3}+$$
$$\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,-e^{c+d\,x}\right]}{a^3\,d^3}-\frac{f^2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a\,d^3}-\frac{2\,b^2\,f^2\,\text{PolyLog}\left[3,e^{c+d\,x}\right]}{a^3\,d^3}+$$
$$\frac{2\,b\,\sqrt{a^2+b^2}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,d^3}-\frac{2\,b\,\sqrt{a^2+b^2}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,d^3}$$

Result (type 4, 1803 leaves) :

$$\frac{1}{2\,a^3\,d^3\,\left(-1+e^{2\,c}\right)}\Big(8\,a\,b\,d^2\,e\,e^{2\,c}\,f\,x+4\,a\,b\,d^2\,e^{2\,c}\,f^2\,x^2+2\,a^2\,d^2\,e^2\,\mathrm{ArcTanh}\left[e^{c+d\,x}\right]+4\,b^2\,d^2\,e^2\,\mathrm{ArcTanh}\left[e^{c+d\,x}\right]-2\,a^2\,d^2\,e^2\,e^{2\,c}\,\mathrm{ArcTanh}\left[e^{c+d\,x}\right]-4\,b^2\,d^2\,e^2\,e^{2\,c}\,\mathrm{ArcTanh}\left[e^{c+d\,x}\right]+4\,a^2\,f^2\,\mathrm{ArcTanh}\left[e^{c+d\,x}\right]-4\,a^2\,e^{2\,c}\,f^2\,\mathrm{ArcTanh}\left[e^{c+d\,x}\right]-2\,a^2\,d^2\,e\,f\,x\,\mathrm{Log}\left[1-e^{c+d\,x}\right]-4\,b^2\,d^2\,e\,f\,x\,\mathrm{Log}\left[1-e^{c+d\,x}\right]+2\,a^2\,d^2\,e\,e^{2\,c}\,f\,x\,\mathrm{Log}\left[1-e^{c+d\,x}\right]+4\,b^2\,d^2\,e\,e^{2\,c}\,f\,x\,\mathrm{Log}\left[1-e^{c+d\,x}\right]-a^2\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1-e^{c+d\,x}\right]-2\,b^2\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1-e^{c+d\,x}\right]+a^2\,d^2\,e^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1-e^{c+d\,x}\right]+2\,b^2\,d^2\,e^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1-e^{c+d\,x}\right]+2\,a^2\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+e^{c+d\,x}\right]+4\,b^2\,d^2\,e\,f\,x\,\mathrm{Log}\left[1+e^{c+d\,x}\right]-2\,a^2\,d^2\,e\,e^{2\,c}\,f\,x\,\mathrm{Log}\left[1+e^{c+d\,x}\right]-4\,b^2\,d^2\,e\,e^{2\,c}\,f\,x\,\mathrm{Log}\left[1+e^{c+d\,x}\right]+a^2\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+e^{c+d\,x}\right]+2\,b^2\,d^2\,f^2\,x^2\,\mathrm{Log}\left[1+e^{c+d\,x}\right]-a^2\,d^2\,e^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+e^{c+d\,x}\right]-2\,b^2\,d^2\,e^{2\,c}\,f^2\,x^2\,\mathrm{Log}\left[1+e^{c+d\,x}\right]+4\,a\,b\,d\,e\,f\,\mathrm{Log}\left[1-e^{2\,(c+d\,x)}\right]-4\,a\,b\,d\,e\,e^{2\,c}\,f\,\mathrm{Log}\left[1-e^{2\,(c+d\,x)}\right]+4\,a\,b\,d\,f^2\,x\,\mathrm{Log}\left[1-e^{2\,(c+d\,x)}\right]-4\,a\,b\,d\,e^{2\,c}\,f^2\,x\,\mathrm{Log}\left[1-e^{2\,(c+d\,x)}\right]-2\,\left(a^2+2\,b^2\right)\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,-e^{c+d\,x}\right]+2\,\left(a^2+2\,b^2\right)\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,e^{c+d\,x}\right]+2\,a\,b\,f^2\,\mathrm{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-2\,a\,b\,e^{2\,c}\,f^2\,\mathrm{PolyLog}\left[2,\,e^{2\,(c+d\,x)}\right]-2\,a^2\,f^2\,\mathrm{PolyLog}\left[3,\,-e^{c+d\,x}\right]-4\,b^2\,f^2\,\mathrm{PolyLog}\left[3,\,-e^{c+d\,x}\right]+2\,a^2\,e^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-e^{c+d\,x}\right]+4\,b^2\,e^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,-e^{c+d\,x}\right]+2\,a^2\,f^2\,\mathrm{PolyLog}\left[3,\,e^{c+d\,x}\right]+4\,b^2\,f^2\,\mathrm{PolyLog}\left[3,\,e^{c+d\,x}\right]-2\,a^2\,e^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,e^{c+d\,x}\right]-4\,b^2\,e^{2\,c}\,f^2\,\mathrm{PolyLog}\left[3,\,e^{c+d\,x}\right]\Big)-$$

$$\frac{1}{a^3\,d^3}\,b\,\left(a^2+b^2\right)\left(\frac{2\,d^2\,e^2\,\mathrm{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{2\,d^2\,e\,e^c\,f\,x\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}+\frac{d^2\,e^c\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}-\frac{2\,d^2\,e\,e^c\,f\,x\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}-\frac{d^2\,e^c\,f^2\,x^2\,\mathrm{Log}\left[1+\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}+\frac{2\,d\,e^c\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}-\frac{2\,d\,e^c\,f\,\left(e+f\,x\right)\,\mathrm{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}-\frac{2\,e^c\,f^2\,\mathrm{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}+\frac{2\,e^c\,f^2\,\mathrm{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^c+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]}{\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right)+\frac{1}{4\,a^2\,d^2}\,\mathrm{Csch}[c]\,\mathrm{Csch}[c+d\,x]^2$$

$$\Big(2\,b\,d\,e^2\,\mathrm{Cosh}[c]+4\,b\,d\,e\,f\,x\,\mathrm{Cosh}[c]+2\,b\,d\,f^2\,x^2\,\mathrm{Cosh}[c]+2\,a\,e\,f\,\mathrm{Cosh}[d\,x]+2\,a\,f^2\,x\,\mathrm{Cosh}[d\,x]-2\,a\,e\,f\,\mathrm{Cosh}[2\,c+d\,x]-2\,a\,f^2\,x\,\mathrm{Cosh}[2\,c+d\,x]-2\,b\,d\,e^2\,\mathrm{Cosh}[c+2\,d\,x]-4\,b\,d\,e\,f\,x\,\mathrm{Cosh}[c+2\,d\,x]-2\,b\,d\,f^2\,x^2\,\mathrm{Cosh}[c+2\,d\,x]+a\,d\,e^2\,\mathrm{Sinh}[d\,x]+2\,a\,d\,e\,f\,x\,\mathrm{Sinh}[d\,x]+a\,d\,f^2\,x^2\,\mathrm{Sinh}[d\,x]-a\,d\,e^2\,\mathrm{Sinh}[2\,c+d\,x]-2\,a\,d\,e\,f\,x\,\mathrm{Sinh}[2\,c+d\,x]-a\,d\,f^2\,x^2\,\mathrm{Sinh}[2\,c+d\,x]\Big)$$

Problem 483: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+fx)\,\text{Coth}[c+dx]^2\,\text{Csch}[c+dx]}{a+b\,\text{Sinh}[c+dx]}\,dx$$

Optimal (type 4, 413 leaves, 38 steps):

$$-\frac{(e+fx)\,\text{ArcTanh}\left[e^{c+dx}\right]}{a\,d}-\frac{2\,b^2\,(e+fx)\,\text{ArcTanh}\left[e^{c+dx}\right]}{a^3\,d}+\frac{b\,(e+fx)\,\text{Coth}[c+dx]}{a^2\,d}-\frac{f\,\text{Csch}[c+dx]}{2\,a\,d^2}-\frac{(e+fx)\,\text{Coth}[c+dx]\,\text{Csch}[c+dx]}{2\,a\,d}-\frac{b\,\sqrt{a^2+b^2}\,(e+fx)\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,d}+\frac{b\,\sqrt{a^2+b^2}\,(e+fx)\,\text{Log}\left[1+\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,d}-\frac{b\,f\,\text{Log}[\text{Sinh}[c+dx]]}{a^2\,d^2}-\frac{f\,\text{PolyLog}\left[2,-e^{c+dx}\right]}{2\,a\,d^2}-\frac{b^2\,f\,\text{PolyLog}\left[2,-e^{c+dx}\right]}{a^3\,d^2}+\frac{f\,\text{PolyLog}\left[2,e^{c+dx}\right]}{2\,a\,d^2}+\frac{b^2\,f\,\text{PolyLog}\left[2,e^{c+dx}\right]}{a^3\,d^2}-\frac{b\,\sqrt{a^2+b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,d^2}+\frac{b\,\sqrt{a^2+b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+dx}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,d^2}$$

Result (type 4, 874 leaves):

$$\frac{1}{4 a^2 d^2}\left(2 b d e \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]-a f \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]-2 b c f \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]+2 b f (c+d x) \operatorname{Cosh}\left[\frac{1}{2}(c+d x)\right]\right) \operatorname{Csch}\left[\frac{1}{2}(c+d x)\right]+\frac{(-d e+c f-f(c+d x)) \operatorname{Csch}\left[\frac{1}{2}(c+d x)\right]^2}{8 a d^2}-\frac{b f \operatorname{Log}[\operatorname{Sinh}[c+d x]]}{a^2 d^2}+\frac{e \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{2 a d}+\frac{b^2 e \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^3 d}-\frac{c f \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{2 a d^2}-\frac{b^2 c f \operatorname{Log}\left[\operatorname{Tanh}\left[\frac{1}{2}(c+d x)\right]\right]}{a^3 d^2}-\frac{1}{2 a d^2} i f \left(i (c+d x)\left(\operatorname{Log}\left[1-e^{-c-d x}\right]-\operatorname{Log}\left[1+e^{-c-d x}\right]\right)+i\left(\operatorname{PolyLog}\left[2,-e^{-c-d x}\right]-\operatorname{PolyLog}\left[2, e^{-c-d x}\right]\right)\right)-\frac{1}{a^3 d^2} i b^2 f \left(i (c+d x)\left(\operatorname{Log}\left[1-e^{-c-d x}\right]-\operatorname{Log}\left[1+e^{-c-d x}\right]\right)+i\left(\operatorname{PolyLog}\left[2,-e^{-c-d x}\right]-\operatorname{PolyLog}\left[2, e^{-c-d x}\right]\right)\right)-\frac{1}{a^3 \sqrt{-\left(a^2+b^2\right)^2}\, d^2} b\left(a^2+b^2\right)\left(2 \sqrt{a^2+b^2}\, d e \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]-2 \sqrt{a^2+b^2}\, c f \operatorname{ArcTan}\left[\frac{a+b \operatorname{Cosh}[c+d x]+b \operatorname{Sinh}[c+d x]}{\sqrt{-a^2-b^2}}\right]+\sqrt{-a^2-b^2}\, f (c+d x) \operatorname{Log}\left[1+\frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{a-\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\, f (c+d x) \operatorname{Log}\left[1+\frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{a+\sqrt{a^2+b^2}}\right]+\sqrt{-a^2-b^2}\, f \operatorname{PolyLog}\left[2, \frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\, f \operatorname{PolyLog}\left[2,-\frac{b(\operatorname{Cosh}[c+d x]+\operatorname{Sinh}[c+d x])}{a+\sqrt{a^2+b^2}}\right]\right)+\frac{(-d e+c f-f(c+d x)) \operatorname{Sech}\left[\frac{1}{2}(c+d x)\right]^2}{8 a d^2}+\frac{1}{4 a^2 d^2} \operatorname{Sech}\left[\frac{1}{2}(c+d x)\right]\left(2 b d e \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]+a f \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]-2 b c f \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]+2 b f (c+d x) \operatorname{Sinh}\left[\frac{1}{2}(c+d x)\right]\right)$$

Problem 485: Attempted integration timed out after 120 seconds.

$$\int \frac{\operatorname{Coth}[c+d x]^2 \operatorname{Csch}[c+d x]}{(e+f x)(a+b \operatorname{Sinh}[c+d x])} \, dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Coth}[c+d\,x]^2\,\text{Csch}[c+d\,x]}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 486: Attempted integration timed out after 120 seconds.

$$\int\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]^3}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 972 leaves, 62 steps):

$$-\frac{3 f (e+f x)^2}{2 a d^2}+\frac{(e+f x)^3}{2 a d}-\frac{(e+f x)^4}{4 a f}-\frac{b^2 (e+f x)^4}{4 a^3 f}+\frac{(a^2+b^2) (e+f x)^4}{4 a^3 f}+$$
$$\frac{6 b f (e+f x)^2 \text{ArcTanh}[e^{c+d x}]}{a^2 d^2}-\frac{3 f (e+f x)^2 \text{Coth}[c+d x]}{2 a d^2}-\frac{(e+f x)^3 \text{Coth}[c+d x]^2}{2 a d}+$$
$$\frac{b (e+f x)^3 \text{Csch}[c+d x]}{a^2 d}-\frac{(a^2+b^2) (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d}-$$
$$\frac{(a^2+b^2) (e+f x)^3 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d}+\frac{3 f^2 (e+f x) \text{Log}[1-e^{2 (c+d x)}]}{a d^3}+$$
$$\frac{(e+f x)^3 \text{Log}[1-e^{2 (c+d x)}]}{a d}+\frac{b^2 (e+f x)^3 \text{Log}[1-e^{2 (c+d x)}]}{a^3 d}+$$
$$\frac{6 b f^2 (e+f x) \text{PolyLog}[2,-e^{c+d x}]}{a^2 d^3}-\frac{6 b f^2 (e+f x) \text{PolyLog}[2,e^{c+d x}]}{a^2 d^3}-$$
$$\frac{3 (a^2+b^2) f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^2}-\frac{3 (a^2+b^2) f (e+f x)^2 \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^2}+$$
$$\frac{3 f^3 \text{PolyLog}[2,e^{2 (c+d x)}]}{2 a d^4}+\frac{3 f (e+f x)^2 \text{PolyLog}[2,e^{2 (c+d x)}]}{2 a d^2}+$$
$$\frac{3 b^2 f (e+f x)^2 \text{PolyLog}[2,e^{2 (c+d x)}]}{2 a^3 d^2}-\frac{6 b f^3 \text{PolyLog}[3,-e^{c+d x}]}{a^2 d^4}+$$
$$\frac{6 b f^3 \text{PolyLog}[3,e^{c+d x}]}{a^2 d^4}+\frac{6 (a^2+b^2) f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^3}+$$
$$\frac{6 (a^2+b^2) f^2 (e+f x) \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^3}-\frac{3 f^2 (e+f x) \text{PolyLog}[3,e^{2 (c+d x)}]}{2 a d^3}-$$
$$\frac{3 b^2 f^2 (e+f x) \text{PolyLog}[3,e^{2 (c+d x)}]}{2 a^3 d^3}-\frac{6 (a^2+b^2) f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^4}-$$
$$\frac{6 (a^2+b^2) f^3 \text{PolyLog}\left[4,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^4}+\frac{3 f^3 \text{PolyLog}[4,e^{2 (c+d x)}]}{4 a d^4}+\frac{3 b^2 f^3 \text{PolyLog}[4,e^{2 (c+d x)}]}{4 a^3 d^4}$$

Result (type 1, 1 leaves):

???

Problem 487: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \text{Coth}[c+d x]^3}{a+b \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 689 leaves, 47 steps):

$$\frac{e f x}{a d}+\frac{f^2 x^2}{2 a d}-\frac{(e+f x)^3}{3 a f}-\frac{b^2 (e+f x)^3}{3 a^3 f}+\frac{(a^2+b^2) (e+f x)^3}{3 a^3 f}+$$
$$\frac{4 b f (e+f x) \text{ArcTanh}\left[e^{c+d x}\right]}{a^2 d^2}-\frac{f (e+f x) \text{Coth}[c+d x]}{a d^2}-\frac{(e+f x)^2 \text{Coth}[c+d x]^2}{2 a d}+$$
$$\frac{b (e+f x)^2 \text{Csch}[c+d x]}{a^2 d}-\frac{(a^2+b^2) (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d}-$$
$$\frac{(a^2+b^2) (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d}+\frac{(e+f x)^2 \text{Log}\left[1-e^{2 (c+d x)}\right]}{a d}+$$
$$\frac{b^2 (e+f x)^2 \text{Log}\left[1-e^{2 (c+d x)}\right]}{a^3 d}+\frac{f^2 \text{Log}[\text{Sinh}[c+d x]]}{a d^3}+\frac{2 b f^2 \text{PolyLog}\left[2,-e^{c+d x}\right]}{a^2 d^3}-$$
$$\frac{2 b f^2 \text{PolyLog}\left[2,e^{c+d x}\right]}{a^2 d^3}-\frac{2 (a^2+b^2) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^2}-$$
$$\frac{2 (a^2+b^2) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^2}+\frac{f (e+f x) \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{a d^2}+$$
$$\frac{b^2 f (e+f x) \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{a^3 d^2}+\frac{2 (a^2+b^2) f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^3}+$$
$$\frac{2 (a^2+b^2) f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^3}-\frac{f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]}{2 a d^3}-\frac{b^2 f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]}{2 a^3 d^3}$$

Result (type 4, 2137 leaves):

$$\frac{b (e+f x)^2 \text{Csch}[c]}{a^2 d}+\frac{(-e^2-2 e f x-f^2 x^2) \text{Csch}\left[\frac{c}{2}+\frac{d x}{2}\right]^2}{8 a d}-\frac{1}{6 a^3 d^3 (-1+e^{2 c})}$$
$$\Big(12 a^2 d^3 e^2 e^{2 c} x+12 b^2 d^3 e^2 e^{2 c} x+12 a^2 d e^{2 c} f^2 x+12 a^2 d^3 e e^{2 c} f x^2+12 b^2 d^3 e e^{2 c} f x^2+$$
$$4 a^2 d^3 e^{2 c} f^2 x^3+4 b^2 d^3 e^{2 c} f^2 x^3+24 a b d e f \text{ArcTanh}\left[e^{c+d x}\right]-24 a b d e e^{2 c} f \text{ArcTanh}\left[e^{c+d x}\right]-$$
$$12 a b d f^2 x \text{Log}\left[1-e^{c+d x}\right]+12 a b d e^{2 c} f^2 x \text{Log}\left[1-e^{c+d x}\right]+12 a b d f^2 x \text{Log}\left[1+e^{c+d x}\right]-$$
$$12 a b d e^{2 c} f^2 x \text{Log}\left[1+e^{c+d x}\right]+6 a^2 d^2 e^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+6 b^2 d^2 e^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$6 a^2 d^2 e^2 e^{2 c} \text{Log}\left[1-e^{2 (c+d x)}\right]-6 b^2 d^2 e^2 e^{2 c} \text{Log}\left[1-e^{2 (c+d x)}\right]+6 a^2 f^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$6 a^2 e^{2 c} f^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+12 a^2 d^2 e f x \text{Log}\left[1-e^{2 (c+d x)}\right]+12 b^2 d^2 e f x \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$12 a^2 d^2 e e^{2 c} f x \text{Log}\left[1-e^{2 (c+d x)}\right]-12 b^2 d^2 e e^{2 c} f x \text{Log}\left[1-e^{2 (c+d x)}\right]+$$
$$6 a^2 d^2 f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+6 b^2 d^2 f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-6 a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-$$
$$6 b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-12 a b (-1+e^{2 c}) f^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+$$
$$12 a b (-1+e^{2 c}) f^2 \text{PolyLog}\left[2,e^{c+d x}\right]+6 a^2 d e f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+$$
$$6 b^2 d e f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 a^2 d e e^{2 c} f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$6 b^2 d e e^{2 c} f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 a^2 d f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+$$
$$6 b^2 d f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 a^2 d e^{2 c} f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-$$
$$6 b^2 d e^{2 c} f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-3 a^2 f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]-3 b^2 f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]+$$
$$3 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]+3 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]\Big)+$$

$$\frac{1}{3 a^3 d^3 \left(-1+e^{2 c}\right)} \left(a^2+b^2\right) \Bigg(6 d^3 e^2 e^{2 c} x+6 d^3 e\, e^{2 c} f x^2+2 d^3 e^{2 c} f^2 x^3+ 3 d^2 e^2 \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]-3 d^2 e^2 e^{2 c} \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]+ 6 d^2 e f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e\, e^{2 c} f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+ 3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+ 6 d^2 e f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e\, e^{2 c} f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+ 3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]- 6 d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]- 6 d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]- 6 f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]- 6 f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 e^{2 c} f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]\Bigg)+ \frac{\left(e^2+2 e f x+f^2 x^2\right) \text{Sech}\left[\frac{c}{2}+\frac{d x}{2}\right]^2}{8 a d}+\frac{1}{2 a^2 d^2}\text{Sech}\left[\frac{c}{2}\right] \text{Sech}\left[\frac{c}{2}+\frac{d x}{2}\right] \left(-b d e^2 \text{Sinh}\left[\frac{d x}{2}\right]-a e f \text{Sinh}\left[\frac{d x}{2}\right]-2 b d e f x \text{Sinh}\left[\frac{d x}{2}\right]- a f^2 x \text{Sinh}\left[\frac{d x}{2}\right]-b d f^2 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)+\frac{1}{2 a^2 d^2}\text{Csch}\left[\frac{c}{2}\right] \text{Csch}\left[\frac{c}{2}+\frac{d x}{2}\right] \left(-b d e^2 \text{Sinh}\left[\frac{d x}{2}\right]+a e f \text{Sinh}\left[\frac{d x}{2}\right]-2 b d e f x \text{Sinh}\left[\frac{d x}{2}\right]+a f^2 x \text{Sinh}\left[\frac{d x}{2}\right]-b d f^2 x^2 \text{Sinh}\left[\frac{d x}{2}\right]\right)$$

Problem 488: Result unnecessarily involves complex numbers and more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \text{Coth}[c+d x]^3}{a+b \text{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 435 leaves, 36 steps):

$$\frac{f x}{2 a d}-\frac{(e+f x)^2}{2 a f}-\frac{b^2 (e+f x)^2}{2 a^3 f}+\frac{(a^2+b^2) (e+f x)^2}{2 a^3 f}+\frac{b f \text{ArcTanh}[\text{Cosh}[c+d x]]}{a^2 d^2}-\frac{f \text{Coth}[c+d x]}{2 a d^2}-\frac{(e+f x) \text{Coth}[c+d x]^2}{2 a d}+\frac{b (e+f x) \text{Csch}[c+d x]}{a^2 d}-\frac{(a^2+b^2) (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d}-\frac{(a^2+b^2) (e+f x) \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d}+\frac{(e+f x) \text{Log}\left[1-e^{2 (c+d x)}\right]}{a d}+\frac{b^2 (e+f x) \text{Log}\left[1-e^{2 (c+d x)}\right]}{a^3 d}-\frac{(a^2+b^2) f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 d^2}-\frac{(a^2+b^2) f \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 d^2}+\frac{f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{2 a d^2}+\frac{b^2 f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]}{2 a^3 d^2}$$

Result (type 4, 1420 leaves):

$$\frac{1}{4 a^2 d^2}\left(2 b d e \text{Cosh}\left[\frac{1}{2} (c+d x)\right]-a f \text{Cosh}\left[\frac{1}{2} (c+d x)\right]-2 b c f \text{Cosh}\left[\frac{1}{2} (c+d x)\right]+2 b f (c+d x) \text{Cosh}\left[\frac{1}{2} (c+d x)\right]\right) \text{Csch}\left[\frac{1}{2} (c+d x)\right]+\frac{(-d e+c f-f (c+d x)) \text{Csch}\left[\frac{1}{2} (c+d x)\right]^2}{8 a d^2}+\frac{e \text{Log}[\text{Sinh}[c+d x]]}{a d}+\frac{b^2 e \text{Log}[\text{Sinh}[c+d x]]}{a^3 d}-\frac{c f \text{Log}[\text{Sinh}[c+d x]]}{a d^2}-\frac{b^2 c f \text{Log}[\text{Sinh}[c+d x]]}{a^3 d^2}-\frac{e \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{a d}-\frac{b^2 e \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{a^3 d}+\frac{c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{a d^2}+\frac{b^2 c f \text{Log}\left[1+\frac{b \text{Sinh}[c+d x]}{a}\right]}{a^3 d^2}-\frac{b f \text{Log}\left[\text{Tanh}\left[\frac{1}{2} (c+d x)\right]\right]}{a^2 d^2}-\frac{1}{a d^2} i f \left(i (c+d x) \text{Log}\left[1-e^{-2 (c+d x)}\right]-\frac{1}{2} i \left(-(c+d x)^2+\text{PolyLog}\left[2,e^{-2 (c+d x)}\right]\right)\right)-\frac{1}{a^3 d^2} i b^2 f \left(i (c+d x) \text{Log}\left[1-e^{-2 (c+d x)}\right]-\frac{1}{2} i \left(-(c+d x)^2+\text{PolyLog}\left[2,e^{-2 (c+d x)}\right]\right)\right)-\frac{1}{a d^2} b f \left(\frac{(c+d x) \text{Log}[a+b \text{Sinh}[c+d x]]}{b}-\frac{1}{b} i \left(\frac{1}{2} i \left(\frac{\pi}{2}-i (c+d x)\right)^2-4 i \text{ArcSin}\left[\frac{\sqrt{\frac{i (a-i b)}{b}}}{\sqrt{2}}\right] \text{ArcTan}\left[\frac{(a+i b) \text{Tan}\left[\frac{1}{2} \left(\frac{\pi}{2}-i (c+d x)\right)\right]}{\sqrt{a^2+b^2}}\right]-\left(\frac{\pi}{2}-i (c+d x)+2 \text{ArcSin}\left[\frac{\sqrt{\frac{i (a-i b)}{b}}}{\sqrt{2}}\right]\right)\right.\right.$$

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

$$\text{Log}\left[1+\frac{\text{i}\left(a+\sqrt{a^2+b^2}\right)e^{\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)}}{b}\right]+\left(\frac{\pi}{2}-\text{i}(c+d x)\right)\text{Log}[a+b\,\text{Sinh}[c+d x]]+$$

$$\text{i}\left(\text{PolyLog}\left[2,-\frac{\text{i}\left(a-\sqrt{a^2+b^2}\right)e^{\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{\text{i}\left(a+\sqrt{a^2+b^2}\right)e^{\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)}}{b}\right]\right)\right)\right)-$$

$$\frac{1}{a^3 d^2}b^3 f\left(\frac{(c+d x)\,\text{Log}[a+b\,\text{Sinh}[c+d x]]}{b}-\frac{1}{b}\text{i}\left(\frac{1}{2}\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)^2-4\,\text{i}\,\text{ArcSin}\left[\frac{\sqrt{\frac{\text{i}(a-\text{i} b)}{b}}}{\sqrt{2}}\right]\right.\right.$$

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

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

$$\text{Log}\left[1+\frac{\text{i}\left(a+\sqrt{a^2+b^2}\right)e^{\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)}}{b}\right]+\left(\frac{\pi}{2}-\text{i}(c+d x)\right)\text{Log}[a+b\,\text{Sinh}[c+d x]]+$$

$$\text{i}\left(\text{PolyLog}\left[2,-\frac{\text{i}\left(a-\sqrt{a^2+b^2}\right)e^{\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{\text{i}\left(a+\sqrt{a^2+b^2}\right)e^{\text{i}\left(\frac{\pi}{2}-\text{i}(c+d x)\right)}}{b}\right]\right)\right)\right)+$$

$$\frac{\left(d\,e-c\,f+f\,(c+d\,x)\right)\,\text{Sech}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{8\,a\,d^2}+\frac{1}{4\,a^2\,d^2}\text{Sech}\left[\frac{1}{2}\,(c+d\,x)\right]\left(-2\,b\,d\,e\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,f\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]+2\,b\,c\,f\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]-2\,b\,f\,(c+d\,x)\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

Problem 490: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Coth}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 31 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Coth}[c+d\,x]^3}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 491: Attempted integration timed out after 120 seconds.

$$\int\frac{(e+f\,x)^3\,\text{Csch}[c+d\,x]^3\,\text{Sech}[c+d\,x]}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1795 leaves, 87 steps):

$$-\frac{3\,f\,(e+f\,x)^2}{2\,a\,d^2}+\frac{(e+f\,x)^3}{2\,a\,d}+\frac{2\,b\,(e+f\,x)^3\,\text{ArcTan}\left[e^{c+d\,x}\right]}{a^2\,d}-\frac{2\,b^3\,(e+f\,x)^3\,\text{ArcTan}\left[e^{c+d\,x}\right]}{a^2\,\left(a^2+b^2\right)\,d}+\frac{6\,b\,f\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a^2\,d^2}+\frac{2\,(e+f\,x)^3\,\text{ArcTanh}\left[e^{2\,c+2\,d\,x}\right]}{a\,d}-\frac{2\,b^2\,(e+f\,x)^3\,\text{ArcTanh}\left[e^{2\,c+2\,d\,x}\right]}{a^3\,d}-\frac{3\,f\,(e+f\,x)^2\,\text{Coth}[c+d\,x]}{2\,a\,d^2}-\frac{(e+f\,x)^3\,\text{Coth}[c+d\,x]^2}{2\,a\,d}+\frac{b\,(e+f\,x)^3\,\text{Csch}[c+d\,x]}{a^2\,d}-\frac{b^4\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d}-\frac{b^4\,(e+f\,x)^3\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d}+\frac{3\,f^2\,(e+f\,x)\,\text{Log}\left[1-e^{2\,(c+d\,x)}\right]}{a\,d^3}+\frac{b^4\,(e+f\,x)^3\,\text{Log}\left[1+e^{2\,(c+d\,x)}\right]}{a^3\,\left(a^2+b^2\right)\,d}+\frac{6\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]}{a^2\,d^3}-\frac{3\,i\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{a^2\,d^2}+\frac{3\,i\,b^3\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-i\,e^{c+d\,x}\right]}{a^2\,\left(a^2+b^2\right)\,d^2}+$$

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

$$\frac{6\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]}{a^2\,d^3}-\frac{3\,b^4\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d^2}-$$

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

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

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

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

$$\frac{6\,i\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]}{a^2\,d^3}-\frac{6\,i\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-i\,e^{c+d\,x}\right]}{a^2\,\left(a^2+b^2\right)\,d^3}-$$

$$\frac{6\,i\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]}{a^2\,d^3}+\frac{6\,i\,b^3\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,i\,e^{c+d\,x}\right]}{a^2\,\left(a^2+b^2\right)\,d^3}+$$

$$\frac{6\,b\,f^3\,\text{PolyLog}\left[3,\,e^{c+d\,x}\right]}{a^2\,d^4}+\frac{6\,b^4\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d^3}+$$

$$\frac{6\,b^4\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d^3}-\frac{3\,b^4\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\,-e^{2\,(c+d\,x)}\right]}{2\,a^3\,\left(a^2+b^2\right)\,d^3}-$$

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

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

$$\frac{6\,i\,b\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]}{a^2\,d^4}+\frac{6\,i\,b^3\,f^3\,\text{PolyLog}\left[4,\,-i\,e^{c+d\,x}\right]}{a^2\,\left(a^2+b^2\right)\,d^4}+$$

$$\frac{6\,i\,b\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]}{a^2\,d^4}-\frac{6\,i\,b^3\,f^3\,\text{PolyLog}\left[4,\,i\,e^{c+d\,x}\right]}{a^2\,\left(a^2+b^2\right)\,d^4}-\frac{6\,b^4\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d^4}-$$

$$\frac{6\,b^4\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)\,d^4}+\frac{3\,b^4\,f^3\,\text{PolyLog}\left[4,\,-e^{2\,(c+d\,x)}\right]}{4\,a^3\,\left(a^2+b^2\right)\,d^4}+\frac{3\,f^3\,\text{PolyLog}\left[4,\,-e^{2\,c+2\,d\,x}\right]}{4\,a\,d^4}-$$

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

Result (type 1, 1 leaves):

???

Problem 492: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Csch}[c+d x]^3 \operatorname{Sech}[c+d x]}{a+b \operatorname{Sinh}[c+d x]} \, dx$$

Optimal (type 4, 1219 leaves, 71 steps):

$$\frac{e f x}{a d}+\frac{f^2 x^2}{2 a d}+\frac{2 b (e+f x)^2 \operatorname{ArcTan}\left[e^{c+d x}\right]}{a^2 d}-\frac{2 b^3 (e+f x)^2 \operatorname{ArcTan}\left[e^{c+d x}\right]}{a^2 \left(a^2+b^2\right) d}+$$
$$\frac{4 b f (e+f x) \operatorname{ArcTanh}\left[e^{c+d x}\right]}{a^2 d^2}+\frac{2 (e+f x)^2 \operatorname{ArcTanh}\left[e^{2 c+2 d x}\right]}{a d}-\frac{2 b^2 (e+f x)^2 \operatorname{ArcTanh}\left[e^{2 c+2 d x}\right]}{a^3 d}-$$
$$\frac{f (e+f x) \operatorname{Coth}[c+d x]}{a d^2}-\frac{(e+f x)^2 \operatorname{Coth}[c+d x]^2}{2 a d}+\frac{b (e+f x)^2 \operatorname{Csch}[c+d x]}{a^2 d}-$$
$$\frac{b^4 (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right) d}-\frac{b^4 (e+f x)^2 \operatorname{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right) d}+\frac{b^4 (e+f x)^2 \operatorname{Log}\left[1+e^{2 (c+d x)}\right]}{a^3 \left(a^2+b^2\right) d}+$$
$$\frac{f^2 \operatorname{Log}[\operatorname{Sinh}[c+d x]]}{a d^3}+\frac{2 b f^2 \operatorname{PolyLog}\left[2,-e^{c+d x}\right]}{a^2 d^3}-\frac{2 i b f (e+f x) \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{a^2 d^2}+$$
$$\frac{2 i b^3 f (e+f x) \operatorname{PolyLog}\left[2,-i e^{c+d x}\right]}{a^2 \left(a^2+b^2\right) d^2}+\frac{2 i b f (e+f x) \operatorname{PolyLog}\left[2, i e^{c+d x}\right]}{a^2 d^2}-$$
$$\frac{2 i b^3 f (e+f x) \operatorname{PolyLog}\left[2, i e^{c+d x}\right]}{a^2 \left(a^2+b^2\right) d^2}-\frac{2 b f^2 \operatorname{PolyLog}\left[2, e^{c+d x}\right]}{a^2 d^3}-$$
$$\frac{2 b^4 f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right) d^2}-\frac{2 b^4 f (e+f x) \operatorname{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right) d^2}+$$
$$\frac{b^4 f (e+f x) \operatorname{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{a^3 \left(a^2+b^2\right) d^2}+\frac{f (e+f x) \operatorname{PolyLog}\left[2,-e^{2 c+2 d x}\right]}{a d^2}-$$
$$\frac{b^2 f (e+f x) \operatorname{PolyLog}\left[2,-e^{2 c+2 d x}\right]}{a^3 d^2}-\frac{f (e+f x) \operatorname{PolyLog}\left[2, e^{2 c+2 d x}\right]}{a d^2}+$$
$$\frac{b^2 f (e+f x) \operatorname{PolyLog}\left[2, e^{2 c+2 d x}\right]}{a^3 d^2}+\frac{2 i b f^2 \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{a^2 d^3}-\frac{2 i b^3 f^2 \operatorname{PolyLog}\left[3,-i e^{c+d x}\right]}{a^2 \left(a^2+b^2\right) d^3}-$$
$$\frac{2 i b f^2 \operatorname{PolyLog}\left[3, i e^{c+d x}\right]}{a^2 d^3}+\frac{2 i b^3 f^2 \operatorname{PolyLog}\left[3, i e^{c+d x}\right]}{a^2 \left(a^2+b^2\right) d^3}+\frac{2 b^4 f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right) d^3}+$$
$$\frac{2 b^4 f^2 \operatorname{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right) d^3}-\frac{b^4 f^2 \operatorname{PolyLog}\left[3,-e^{2 (c+d x)}\right]}{2 a^3 \left(a^2+b^2\right) d^3}-\frac{f^2 \operatorname{PolyLog}\left[3,-e^{2 c+2 d x}\right]}{2 a d^3}+$$
$$\frac{b^2 f^2 \operatorname{PolyLog}\left[3,-e^{2 c+2 d x}\right]}{2 a^3 d^3}+\frac{f^2 \operatorname{PolyLog}\left[3, e^{2 c+2 d x}\right]}{2 a d^3}-\frac{b^2 f^2 \operatorname{PolyLog}\left[3, e^{2 c+2 d x}\right]}{2 a^3 d^3}$$

Result (type 4, 2726 leaves):

$$\frac{\left(-e^2-2 e f x-f^2 x^2\right) \text{Csch}\left[\frac{c}{2}+\frac{d x}{2}\right]^2}{8 a d}+\frac{1}{6 \left(a^2+b^2\right) d^3 \left(1+e^{2 c}\right)}\left(-12 a d^3 e^2 e^{2 c} x+12 a d^3 e^2 \left(1+e^{2 c}\right) x+12 a d^3 e f x^2+4 a d^3 f^2 x^3+12 b d^2 e^2 \left(1+e^{2 c}\right) \text{ArcTan}\left[e^{c+d x}\right]-6 a d^2 e^2 \left(1+e^{2 c}\right) \left(2 d x-\text{Log}\left[1+e^{2 (c+d x)}\right]\right)+12 i b d e \left(1+e^{2 c}\right) f \left(d x \left(\text{Log}\left[1-i e^{c+d x}\right]-\text{Log}\left[1+i e^{c+d x}\right]\right)-\text{PolyLog}\left[2,-i e^{c+d x}\right]+\text{PolyLog}\left[2,i e^{c+d x}\right]\right)-6 a d e \left(1+e^{2 c}\right) f \left(2 d x \left(d x-\text{Log}\left[1+e^{2 (c+d x)}\right]\right)-\text{PolyLog}\left[2,-e^{2 (c+d x)}\right]\right)+6 i b \left(1+e^{2 c}\right) f^2 \left(d^2 x^2 \text{Log}\left[1-i e^{c+d x}\right]-d^2 x^2 \text{Log}\left[1+i e^{c+d x}\right]-2 d x \text{PolyLog}\left[2,-i e^{c+d x}\right]+2 d x \text{PolyLog}\left[2,i e^{c+d x}\right]+2 \text{PolyLog}\left[3,-i e^{c+d x}\right]-2 \text{PolyLog}\left[3,i e^{c+d x}\right]\right)-a \left(1+e^{2 c}\right) f^2 \left(2 d^2 x^2 \left(2 d x-3 \text{Log}\left[1+e^{2 (c+d x)}\right]\right)-6 d x \text{PolyLog}\left[2,-e^{2 (c+d x)}\right]+3 \text{PolyLog}\left[3,-e^{2 (c+d x)}\right]\right)\right)-\frac{1}{6 a^3 d^3 \left(-1+e^{2 c}\right)}$$

$$\left(-12 a^2 d^3 e^2 e^{2 c} x+12 b^2 d^3 e^2 e^{2 c} x+12 a^2 d e^{2 c} f^2 x-12 a^2 d^3 e e^{2 c} f x^2+12 b^2 d^3 e e^{2 c} f x^2-4 a^2 d^3 e^{2 c} f^2 x^3+4 b^2 d^3 e^{2 c} f^2 x^3+24 a b d e f \text{ArcTanh}\left[e^{c+d x}\right]-24 a b d e e^{2 c} f \text{ArcTanh}\left[e^{c+d x}\right]-12 a b d f^2 x \text{Log}\left[1-e^{c+d x}\right]+12 a b d e^{2 c} f^2 x \text{Log}\left[1-e^{c+d x}\right]+12 a b d f^2 x \text{Log}\left[1+e^{c+d x}\right]-12 a b d e^{2 c} f^2 x \text{Log}\left[1+e^{c+d x}\right]-6 a^2 d^2 e^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+6 b^2 d^2 e^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+6 a^2 d^2 e^2 e^{2 c} \text{Log}\left[1-e^{2 (c+d x)}\right]-6 b^2 d^2 e^2 e^{2 c} \text{Log}\left[1-e^{2 (c+d x)}\right]+6 a^2 f^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-6 a^2 e^{2 c} f^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-12 a^2 d^2 e f x \text{Log}\left[1-e^{2 (c+d x)}\right]+12 b^2 d^2 e f x \text{Log}\left[1-e^{2 (c+d x)}\right]+12 a^2 d^2 e e^{2 c} f x \text{Log}\left[1-e^{2 (c+d x)}\right]-12 b^2 d^2 e e^{2 c} f x \text{Log}\left[1-e^{2 (c+d x)}\right]-6 a^2 d^2 f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+6 b^2 d^2 f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]+6 a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-6 b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{2 (c+d x)}\right]-12 a b \left(-1+e^{2 c}\right) f^2 \text{PolyLog}\left[2,-e^{c+d x}\right]+12 a b \left(-1+e^{2 c}\right) f^2 \text{PolyLog}\left[2,e^{c+d x}\right]-6 a^2 d e f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 b^2 d e f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 a^2 d e e^{2 c} f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 b^2 d e e^{2 c} f \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 a^2 d f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 b^2 d f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 a^2 d e^{2 c} f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-6 b^2 d e^{2 c} f^2 x \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+3 a^2 f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]-3 b^2 f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]-3 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]+3 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{2 (c+d x)}\right]\right)+$$

$$\frac{1}{3 a^3 \left(a^2+b^2\right) d^3 \left(-1+e^{2 c}\right)} b^4 \left(6 d^3 e^2 e^{2 c} x+6 d^3 e e^{2 c} f x^2+2 d^3 e^{2 c} f^2 x^3+3 d^2 e^2 \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]-3 d^2 e^2 e^{2 c} \text{Log}\left[2 a e^{c+d x}+b \left(-1+e^{2 (c+d x)}\right)\right]+6 d^2 e f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e e^{2 c} f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+6 d^2 e f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-6 d^2 e e^{2 c} f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]+3 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-3 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]-$$

$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,d\,\left(-1+e^{2\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}-\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]-$$
$$6\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]+6\,e^{2\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{2\,c+d\,x}}{a\,e^{c}+\sqrt{\left(a^2+b^2\right)\,e^{2\,c}}}\right]\Bigg)+$$
$$\frac{1}{6\,a^2\,\left(a^2+b^2\right)\,d}\left(-3\,a^3\,d\,e^2\,x-3\,a^3\,d\,e\,f\,x^2-a^3\,d\,f^2\,x^3+3\,a^2\,b\,e^2\,\text{Cosh}[c]+3\,b^3\,e^2\,\text{Cosh}[c]+\right.$$
$$\left.6\,a^2\,b\,e\,f\,x\,\text{Cosh}[c]+6\,b^3\,e\,f\,x\,\text{Cosh}[c]+3\,a^2\,b\,f^2\,x^2\,\text{Cosh}[c]+3\,b^3\,f^2\,x^2\,\text{Cosh}[c]\right)$$
$$\text{Csch}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}\right]\,\text{Sech}[c]+\frac{\left(e^2+2\,e\,f\,x+f^2\,x^2\right)\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]^2}{8\,a\,d}+\frac{1}{2\,a^2\,d^2}$$
$$\text{Sech}\left[\frac{c}{2}\right]\,\text{Sech}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\,\left(-b\,d\,e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]-a\,e\,f\,\text{Sinh}\left[\frac{d\,x}{2}\right]-2\,b\,d\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-\right.$$
$$\left.a\,f^2\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-b\,d\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)+\frac{1}{2\,a^2\,d^2}\text{Csch}\left[\frac{c}{2}\right]\,\text{Csch}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(-b\,d\,e^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]+a\,e\,f\,\text{Sinh}\left[\frac{d\,x}{2}\right]-2\,b\,d\,e\,f\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]+a\,f^2\,x\,\text{Sinh}\left[\frac{d\,x}{2}\right]-b\,d\,f^2\,x^2\,\text{Sinh}\left[\frac{d\,x}{2}\right]\right)$$

Problem 495: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Csch}[c+d\,x]^3\,\text{Sech}[c+d\,x]}{\left(e+f\,x\right)\,\left(a+b\,\text{Sinh}[c+d\,x]\right)}\,dx$$

Optimal (type 8, 37 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^3\,\text{Sech}[c+d\,x]}{\left(e+f\,x\right)\,\left(a+b\,\text{Sinh}[c+d\,x]\right)},\,x\right]$$

Result (type 1, 1 leaves):

???

Problem 496: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(e+f\,x\right)^2\,\text{Csch}[c+d\,x]^3\,\text{Sech}[c+d\,x]^2}{a+b\,\text{Sinh}[c+d\,x]}\,dx$$

Optimal (type 4, 1245 leaves, 88 steps):

$$\frac{2 b (e+f x)^2}{a^2 d}-\frac{b^3 (e+f x)^2}{a^2 (a^2+b^2) d}+\frac{4 f^2 x \text{ArcTan}[e^{c+d x}]}{a d^2}-\frac{4 b^2 f (e+f x) \text{ArcTan}[e^{c+d x}]}{a^3 d^2}+$$
$$\frac{4 b^4 f (e+f x) \text{ArcTan}[e^{c+d x}]}{a^3 (a^2+b^2) d^2}+\frac{2 e f \text{ArcTan}[\text{Sinh}[c+d x]]}{a d^2}+\frac{3 (e+f x)^2 \text{ArcTanh}[e^{c+d x}]}{a d}-$$
$$\frac{2 b^2 (e+f x)^2 \text{ArcTanh}[e^{c+d x}]}{a^3 d}-\frac{f^2 \text{ArcTanh}[\text{Cosh}[c+d x]]}{a d^3}+\frac{2 b (e+f x)^2 \text{Coth}[2 c+2 d x]}{a^2 d}-$$
$$\frac{e f \text{Csch}[c+d x]}{a d^2}-\frac{f^2 x \text{Csch}[c+d x]}{a d^2}-\frac{b^5 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 (a^2+b^2)^{3/2} d}+$$
$$\frac{b^5 (e+f x)^2 \text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 (a^2+b^2)^{3/2} d}+\frac{2 b^3 f (e+f x) \text{Log}[1+e^{2 (c+d x)}]}{a^2 (a^2+b^2) d^2}-$$
$$\frac{2 b f (e+f x) \text{Log}[1-e^{4 (c+d x)}]}{a^2 d^2}+\frac{3 f (e+f x) \text{PolyLog}[2,-e^{c+d x}]}{a d^2}-$$
$$\frac{2 b^2 f (e+f x) \text{PolyLog}[2,-e^{c+d x}]}{a^3 d^2}-\frac{2 i f^2 \text{PolyLog}[2,-i e^{c+d x}]}{a d^3}+$$
$$\frac{2 i b^2 f^2 \text{PolyLog}[2,-i e^{c+d x}]}{a^3 d^3}-\frac{2 i b^4 f^2 \text{PolyLog}[2,-i e^{c+d x}]}{a^3 (a^2+b^2) d^3}+\frac{2 i f^2 \text{PolyLog}[2,i e^{c+d x}]}{a d^3}-$$
$$\frac{2 i b^2 f^2 \text{PolyLog}[2,i e^{c+d x}]}{a^3 d^3}+\frac{2 i b^4 f^2 \text{PolyLog}[2,i e^{c+d x}]}{a^3 (a^2+b^2) d^3}-\frac{3 f (e+f x) \text{PolyLog}[2,e^{c+d x}]}{a d^2}+$$
$$\frac{2 b^2 f (e+f x) \text{PolyLog}[2,e^{c+d x}]}{a^3 d^2}-\frac{2 b^5 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 (a^2+b^2)^{3/2} d^2}+$$
$$\frac{2 b^5 f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 (a^2+b^2)^{3/2} d^2}+\frac{b^3 f^2 \text{PolyLog}[2,-e^{2 (c+d x)}]}{a^2 (a^2+b^2) d^3}-$$
$$\frac{b f^2 \text{PolyLog}[2,e^{4 (c+d x)}]}{2 a^2 d^3}-\frac{3 f^2 \text{PolyLog}[3,-e^{c+d x}]}{a d^3}+\frac{2 b^2 f^2 \text{PolyLog}[3,-e^{c+d x}]}{a^3 d^3}+$$
$$\frac{3 f^2 \text{PolyLog}[3,e^{c+d x}]}{a d^3}-\frac{2 b^2 f^2 \text{PolyLog}[3,e^{c+d x}]}{a^3 d^3}+\frac{2 b^5 f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 (a^2+b^2)^{3/2} d^3}-$$
$$\frac{2 b^5 f^2 \text{PolyLog}\left[3,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 (a^2+b^2)^{3/2} d^3}-\frac{3 (e+f x)^2 \text{Sech}[c+d x]}{2 a d}+\frac{b^2 (e+f x)^2 \text{Sech}[c+d x]}{a^3 d}-$$
$$\frac{b^4 (e+f x)^2 \text{Sech}[c+d x]}{a^3 (a^2+b^2) d}-\frac{(e+f x)^2 \text{Csch}[c+d x]^2 \text{Sech}[c+d x]}{2 a d}-\frac{b^3 (e+f x)^2 \text{Tanh}[c+d x]}{a^2 (a^2+b^2) d}$$

Result (type 4, 2850 leaves) :

$$\frac{1}{2 a^3 d^3 \left(-1+e^{2 c}\right)}\Big(8 a b d^2 e\, e^{2 c} f x+4 a b d^2 e^{2 c} f^2 x^2-6 a^2 d^2 e^2 \text{ArcTanh}\left[e^{c+d x}\right]+4 b^2 d^2 e^2 \text{ArcTanh}\left[e^{c+d x}\right]+6 a^2 d^2 e^2 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]-4 b^2 d^2 e^2 e^{2 c} \text{ArcTanh}\left[e^{c+d x}\right]+4 a^2 f^2 \text{ArcTanh}\left[e^{c+d x}\right]-4 a^2 e^{2 c} f^2 \text{ArcTanh}\left[e^{c+d x}\right]+6 a^2 d^2 e f x \text{Log}\left[1-e^{c+d x}\right]-4 b^2 d^2 e f x \text{Log}\left[1-e^{c+d x}\right]-6 a^2 d^2 e\, e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]+4 b^2 d^2 e\, e^{2 c} f x \text{Log}\left[1-e^{c+d x}\right]+3 a^2 d^2 f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-2 b^2 d^2 f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-3 a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]+2 b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1-e^{c+d x}\right]-6 a^2 d^2 e f x \text{Log}\left[1+e^{c+d x}\right]+4 b^2 d^2 e f x \text{Log}\left[1+e^{c+d x}\right]+6 a^2 d^2 e\, e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]-4 b^2 d^2 e\, e^{2 c} f x \text{Log}\left[1+e^{c+d x}\right]-3 a^2 d^2 f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+2 b^2 d^2 f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+3 a^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]-2 b^2 d^2 e^{2 c} f^2 x^2 \text{Log}\left[1+e^{c+d x}\right]+4 a b d e f \text{Log}\left[1-e^{2 (c+d x)}\right]-4 a b d e\, e^{2 c} f \text{Log}\left[1-e^{2 (c+d x)}\right]+4 a b d f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]-4 a b d e^{2 c} f^2 x \text{Log}\left[1-e^{2 (c+d x)}\right]+2 \left(3 a^2-2 b^2\right) d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,-e^{c+d x}\right]-2 \left(3 a^2-2 b^2\right) d \left(-1+e^{2 c}\right) f (e+f x) \text{PolyLog}\left[2,e^{c+d x}\right]+2 a b f^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]-2 a b e^{2 c} f^2 \text{PolyLog}\left[2,e^{2 (c+d x)}\right]+6 a^2 f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-4 b^2 f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-6 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]+4 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,-e^{c+d x}\right]-6 a^2 f^2 \text{PolyLog}\left[3,e^{c+d x}\right]+4 b^2 f^2 \text{PolyLog}\left[3,e^{c+d x}\right]+6 a^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{c+d x}\right]-4 b^2 e^{2 c} f^2 \text{PolyLog}\left[3,e^{c+d x}\right]\Big)-$$

$$\frac{1}{a^3 \left(a^2+b^2\right) d^3} b^5 \left(\frac{2 d^2 e^2 \text{ArcTan}\left[\frac{a+b e^{c+d x}}{\sqrt{-a^2-b^2}}\right]}{\sqrt{-a^2-b^2}}+\frac{2 d^2 e\, e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}+\frac{d^2 e^c f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-\frac{2 d^2 e\, e^c f x \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-\frac{d^2 e^c f^2 x^2 \text{Log}\left[1+\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}+\frac{2 d e^c f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-\frac{2 d e^c f (e+f x) \text{PolyLog}\left[2,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}-\frac{2 e^c f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c-\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}+\frac{2 e^c f^2 \text{PolyLog}\left[3,-\frac{b e^{2 c+d x}}{a e^c+\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right]}{\sqrt{\left(a^2+b^2\right) e^{2 c}}}\right)-$$

$$\left(2 b e f \text{Sech}[c] \left(\text{Cosh}[c] \text{Log}[\text{Cosh}[c] \text{Cosh}[d x]+\text{Sinh}[c] \text{Sinh}[d x]]-d x \text{Sinh}[c]\right)\right)\Big/\left(\left(a^2+b^2\right) d^2 \left(\text{Cosh}[c]^2-\text{Sinh}[c]^2\right)\right)+$$

$$\frac{4 a e f \text{ArcTan}\left[\frac{\text{Sinh}[c]+\text{Cosh}[c] \text{Tanh}\left[\frac{d x}{2}\right]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right]}{\left(a^2+b^2\right) d^2 \sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}+$$

$$\Bigg(b f^2 \text{Csch}[c]$$

$$\left(-d^2 e^{-\text{ArcTanh}[\text{Coth}[c]]} x^2 + \frac{1}{\sqrt{1-\text{Coth}[c]^2}} i\,\text{Coth}[c] \left(-d x \left(-\pi + 2 i\,\text{ArcTanh}[\text{Coth}[c]]\right) - \pi \text{Log}\left[1+e^{2 d x}\right] - 2 \left(i d x + i\,\text{ArcTanh}[\text{Coth}[c]]\right) \text{Log}\left[1-e^{2 i (i d x + i\,\text{ArcTanh}[\text{Coth}[c]])}\right] + \pi \text{Log}[\text{Cosh}[d x]] + 2 i\,\text{ArcTanh}[\text{Coth}[c]]\,\text{Log}[i\,\text{Sinh}[d x + \text{ArcTanh}[\text{Coth}[c]]]] + i\,\text{PolyLog}\left[2, e^{2 i (i d x + i\,\text{ArcTanh}[\text{Coth}[c]])}\right]\right) \text{Sech}[c]\right) \Big/$$

$$\left(\left(a^2+b^2\right) d^3 \sqrt{\text{Csch}[c]^2 \left(-\text{Cosh}[c]^2+\text{Sinh}[c]^2\right)}\right) + \frac{1}{\left(a^2+b^2\right) d^3} 2 a f^2$$

$$\left(-\frac{1}{\sqrt{1-\text{Coth}[c]^2}} i\,\text{Csch}[c] \left(i \left(d x + \text{ArcTanh}[\text{Coth}[c]]\right) \left(\text{Log}\left[1-e^{-d x-\text{ArcTanh}[\text{Coth}[c]]}\right] - \text{Log}\left[1+e^{-d x-\text{ArcTanh}[\text{Coth}[c]]}\right]\right) + i \left(\text{PolyLog}\left[2, -e^{-d x-\text{ArcTanh}[\text{Coth}[c]]}\right] - \text{PolyLog}\left[2, e^{-d x-\text{ArcTanh}[\text{Coth}[c]]}\right]\right)\right) - \frac{2\,\text{ArcTan}\left[\frac{\text{Sinh}[c]+\text{Cosh}[c]\,\text{Tanh}\left[\frac{d x}{2}\right]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right] \text{ArcTanh}[\text{Coth}[c]]}{\sqrt{\text{Cosh}[c]^2-\text{Sinh}[c]^2}}\right) +$$

$$\frac{1}{16 a^2 \left(a^2+b^2\right) d^2} \text{Csch}[c]\,\text{Csch}[c+d x]^2\,\text{Sech}[c]\,\text{Sech}[c+d x]$$
$$\left(2 a^3 e f \text{Cosh}[2 d x] + 2 a b^2 e f \text{Cosh}[2 d x] + 2 a^3 f^2 x \text{Cosh}[2 d x] + 2 a b^2 f^2 x \text{Cosh}[2 d x] + 4 a^2 b d e^2 \text{Cosh}[c-d x] + 8 a^2 b d e f x \text{Cosh}[c-d x] + 4 a^2 b d f^2 x^2 \text{Cosh}[c-d x] + 2 b^3 d e^2 \text{Cosh}[c+d x] + 4 b^3 d e f x \text{Cosh}[c+d x] + 2 b^3 d f^2 x^2 \text{Cosh}[c+d x] + 2 b^3 d e^2 \text{Cosh}[3 c+d x] + 4 b^3 d e f x \text{Cosh}[3 c+d x] + 2 b^3 d f^2 x^2 \text{Cosh}[3 c+d x] - 2 a^3 e f \text{Cosh}[4 c+2 d x] - 2 a b^2 e f \text{Cosh}[4 c+2 d x] - 2 a^3 f^2 x \text{Cosh}[4 c+2 d x] - 2 a b^2 f^2 x \text{Cosh}[4 c+2 d x] - 4 a^2 b d e^2 \text{Cosh}[c+3 d x] - 2 b^3 d e^2 \text{Cosh}[c+3 d x] - 8 a^2 b d e f x \text{Cosh}[c+3 d x] - 4 b^3 d e f x \text{Cosh}[c+3 d x] - 4 a^2 b d f^2 x^2 \text{Cosh}[c+3 d x] - 2 b^3 d f^2 x^2 \text{Cosh}[c+3 d x] - 2 b^3 d e^2 \text{Cosh}[3 c+3 d x] - 4 b^3 d e f x \text{Cosh}[3 c+3 d x] - 2 b^3 d f^2 x^2 \text{Cosh}[3 c+3 d x] + 2 a^3 d e^2 \text{Sinh}[2 c] - 2 a b^2 d e^2 \text{Sinh}[2 c] + 4 a^3 d e f x \text{Sinh}[2 c] - 4 a b^2 d e f x \text{Sinh}[2 c] + 2 a^3 d f^2 x^2 \text{Sinh}[2 c] - 2 a b^2 d f^2 x^2 \text{Sinh}[2 c] + 3 a^3 d e^2 \text{Sinh}[2 d x] + a b^2 d e^2 \text{Sinh}[2 d x] + 6 a^3 d e f x \text{Sinh}[2 d x] + 2 a b^2 d e f x \text{Sinh}[2 d x] + 3 a^3 d f^2 x^2 \text{Sinh}[2 d x] + a b^2 d f^2 x^2 \text{Sinh}[2 d x] - 3 a^3 d e^2 \text{Sinh}[4 c+2 d x] - a b^2 d e^2 \text{Sinh}[4 c+2 d x] - 6 a^3 d e f x \text{Sinh}[4 c+2 d x] - 2 a b^2 d e f x \text{Sinh}[4 c+2 d x] - 3 a^3 d f^2 x^2 \text{Sinh}[4 c+2 d x] - a b^2 d f^2 x^2 \text{Sinh}[4 c+2 d x]\right)$$

Problem 497: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(e+f x)\,\text{Csch}[c+d x]^3\,\text{Sech}[c+d x]^2}{a+b\,\text{Sinh}[c+d x]}\,dx$$

Optimal (type 4, 699 leaves, 44 steps):

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

$$\frac{3\,f\,x\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a\,d}-\frac{2\,b^2\,f\,x\,\text{ArcTanh}\left[e^{c+d\,x}\right]}{a^3\,d}-\frac{3\,f\,x\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{2\,a\,d}+$$

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

$$\frac{b^2\,\left(e+f\,x\right)\,\text{ArcTanh}[\text{Cosh}[c+d\,x]]}{a^3\,d}+\frac{2\,b\,\left(e+f\,x\right)\,\text{Coth}[2\,c+2\,d\,x]}{a^2\,d}-\frac{f\,\text{Csch}[c+d\,x]}{2\,a\,d^2}-$$

$$\frac{b^5\,\left(e+f\,x\right)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)^{3/2}\,d}+\frac{b^5\,\left(e+f\,x\right)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)^{3/2}\,d}+\frac{b^3\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{a^2\,\left(a^2+b^2\right)\,d^2}-$$

$$\frac{b\,f\,\text{Log}[\text{Sinh}[2\,c+2\,d\,x]]}{a^2\,d^2}+\frac{3\,f\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]}{2\,a\,d^2}-\frac{b^2\,f\,\text{PolyLog}\left[2,\,-e^{c+d\,x}\right]}{a^3\,d^2}-$$

$$\frac{3\,f\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]}{2\,a\,d^2}+\frac{b^2\,f\,\text{PolyLog}\left[2,\,e^{c+d\,x}\right]}{a^3\,d^2}-\frac{b^5\,f\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)^{3/2}\,d^2}+$$

$$\frac{b^5\,f\,\text{PolyLog}\left[2,\,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]}{a^3\,\left(a^2+b^2\right)^{3/2}\,d^2}-\frac{3\,\left(e+f\,x\right)\,\text{Sech}[c+d\,x]}{2\,a\,d}+\frac{b^2\,\left(e+f\,x\right)\,\text{Sech}[c+d\,x]}{a^3\,d}-$$

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

Result (type 4, 1012 leaves) :

$$\frac{f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{(a-\text{i}\,b)\,d^2}+\frac{f\,\text{ArcTan}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{(a+\text{i}\,b)\,d^2}+$$
$$\frac{1}{4\,a^2\,d^2}\left(2\,b\,d\,e\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]-a\,f\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]-\right.$$
$$\left.2\,b\,c\,f\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+2\,b\,f\,(c+d\,x)\,\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\text{Csch}\left[\frac{1}{2}\,(c+d\,x)\right]+$$
$$\frac{(-d\,e+c\,f-f\,(c+d\,x))\,\text{Csch}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{8\,a\,d^2}+\frac{\text{i}\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{2\,(a-\text{i}\,b)\,d^2}-$$
$$\frac{\text{i}\,f\,\text{Log}[\text{Cosh}[c+d\,x]]}{2\,(a+\text{i}\,b)\,d^2}-\frac{b\,f\,\text{Log}[\text{Sinh}[c+d\,x]]}{a^2\,d^2}-\frac{3\,e\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{2\,a\,d}+$$
$$\frac{b^2\,e\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a^3\,d}+\frac{3\,c\,f\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{2\,a\,d^2}-$$
$$\frac{b^2\,c\,f\,\text{Log}\left[\text{Tanh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a^3\,d^2}+\frac{1}{2\,a\,d^2}3\,\text{i}\,f\,\left(\text{i}\,(c+d\,x)\,\left(\text{Log}\left[1-e^{-c-d\,x}\right]-\text{Log}\left[1+e^{-c-d\,x}\right]\right)+\right.$$
$$\left.\text{i}\,\left(\text{PolyLog}\left[2,-e^{-c-d\,x}\right]-\text{PolyLog}\left[2,e^{-c-d\,x}\right]\right)\right)-\frac{1}{a^3\,d^2}\text{i}\,b^2\,f$$
$$\left(\text{i}\,(c+d\,x)\,\left(\text{Log}\left[1-e^{-c-d\,x}\right]-\text{Log}\left[1+e^{-c-d\,x}\right]\right)+\text{i}\,\left(\text{PolyLog}\left[2,-e^{-c-d\,x}\right]-\text{PolyLog}\left[2,e^{-c-d\,x}\right]\right)\right)+$$
$$\left(b^5\,(a^2+b^2)\,\left(2\,\sqrt{a^2+b^2}\,d\,e\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]-2\,\sqrt{a^2+b^2}\,c\,f\,\text{ArcTan}\left[\frac{a+b\,e^{c+d\,x}}{\sqrt{-a^2-b^2}}\right]+\right.\right.$$
$$\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a-\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\,f\,(c+d\,x)\,\text{Log}\left[1+\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]+$$
$$\left.\left.\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,\frac{b\,e^{c+d\,x}}{-a+\sqrt{a^2+b^2}}\right]-\sqrt{-a^2-b^2}\,f\,\text{PolyLog}\left[2,-\frac{b\,e^{c+d\,x}}{a+\sqrt{a^2+b^2}}\right]\right)\right)\Big/$$
$$\left(a^3\,\left(-(a^2+b^2)^2\right)^{3/2}\,d^2\right)+\frac{(-d\,e+c\,f-f\,(c+d\,x))\,\text{Sech}\left[\frac{1}{2}\,(c+d\,x)\right]^2}{8\,a\,d^2}+\frac{1}{4\,a^2\,d^2}$$
$$\text{Sech}\left[\frac{1}{2}\,(c+d\,x)\right]\left(2\,b\,d\,e\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]+a\,f\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]-\right.$$
$$\left.2\,b\,c\,f\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]+2\,b\,f\,(c+d\,x)\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right)+\frac{1}{(a^2+b^2)\,d^2}\text{Sech}[c+d\,x]$$
$$(-a\,d\,e+a\,c\,f-a\,f\,(c+d\,x)+b\,d\,e\,\text{Sinh}[c+d\,x]-b\,c\,f\,\text{Sinh}[c+d\,x]+b\,f\,(c+d\,x)\,\text{Sinh}[c+d\,x])$$

Problem 499: Attempted integration timed out after 120 seconds.

$$\int\frac{\text{Csch}[c+d\,x]^3\,\text{Sech}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])}\,dx$$

Optimal (type 8, 39 leaves, 0 steps):

$$\text{Int}\left[\frac{\text{Csch}[c+d\,x]^3\,\text{Sech}[c+d\,x]^2}{(e+f\,x)\,(a+b\,\text{Sinh}[c+d\,x])},x\right]$$

Result (type 1, 1 leaves):

???

Problem 500: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)\, \text{Csch}[c+d x]^3\, \text{Sech}[c+d x]^3}{a+b\, \text{Sinh}[c+d x]}\, dx$$

Optimal (type 4, 1122 leaves, 65 steps):

$$\frac{b^2 f x}{2 a^3 d}+\frac{3 b f x \,\text{ArcTan}\left[e^{c+d x}\right]}{a^2 d}-\frac{2 b^5 (e+f x)\,\text{ArcTan}\left[e^{c+d x}\right]}{a^2 \left(a^2+b^2\right)^2 d}-\frac{b^3 (e+f x)\,\text{ArcTan}\left[e^{c+d x}\right]}{a^2 \left(a^2+b^2\right) d}-$$
$$\frac{3 b f x\,\text{ArcTan}[\text{Sinh}[c+d x]]}{2 a^2 d}+\frac{3 b (e+f x)\,\text{ArcTan}[\text{Sinh}[c+d x]]}{2 a^2 d}-\frac{2 b^2 f x\,\text{ArcTanh}\left[e^{2 c+2 d x}\right]}{a^3 d}+$$
$$\frac{4 (e+f x)\,\text{ArcTanh}\left[e^{2 c+2 d x}\right]}{a d}+\frac{b f\,\text{ArcTanh}[\text{Cosh}[c+d x]]}{a^2 d^2}+\frac{3 b (e+f x)\,\text{Csch}[c+d x]}{2 a^2 d}-$$
$$\frac{f\,\text{Csch}[2 c+2 d x]}{a d^2}-\frac{2 (e+f x)\,\text{Coth}[2 c+2 d x]\,\text{Csch}[2 c+2 d x]}{a d}-\frac{b^6 (e+f x)\,\text{Log}\left[1+\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right)^2 d}-$$
$$\frac{b^6 (e+f x)\,\text{Log}\left[1+\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right)^2 d}+\frac{b^6 (e+f x)\,\text{Log}\left[1+e^{2 (c+d x)}\right]}{a^3 \left(a^2+b^2\right)^2 d}-\frac{b^2 f x\,\text{Log}[\text{Tanh}[c+d x]]}{a^3 d}+$$
$$\frac{b^2 (e+f x)\,\text{Log}[\text{Tanh}[c+d x]]}{a^3 d}-\frac{3 i b f\,\text{PolyLog}\left[2,-i e^{c+d x}\right]}{2 a^2 d^2}+\frac{i b^5 f\,\text{PolyLog}\left[2,-i e^{c+d x}\right]}{a^2 \left(a^2+b^2\right)^2 d^2}+$$
$$\frac{i b^3 f\,\text{PolyLog}\left[2,-i e^{c+d x}\right]}{2 a^2 \left(a^2+b^2\right) d^2}+\frac{3 i b f\,\text{PolyLog}\left[2,i e^{c+d x}\right]}{2 a^2 d^2}-\frac{i b^5 f\,\text{PolyLog}\left[2,i e^{c+d x}\right]}{a^2 \left(a^2+b^2\right)^2 d^2}-$$
$$\frac{i b^3 f\,\text{PolyLog}\left[2,i e^{c+d x}\right]}{2 a^2 \left(a^2+b^2\right) d^2}-\frac{b^6 f\,\text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a-\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right)^2 d^2}-\frac{b^6 f\,\text{PolyLog}\left[2,-\frac{b e^{c+d x}}{a+\sqrt{a^2+b^2}}\right]}{a^3 \left(a^2+b^2\right)^2 d^2}+$$
$$\frac{b^6 f\,\text{PolyLog}\left[2,-e^{2 (c+d x)}\right]}{2 a^3 \left(a^2+b^2\right)^2 d^2}+\frac{f\,\text{PolyLog}\left[2,-e^{2 c+2 d x}\right]}{a d^2}-\frac{b^2 f\,\text{PolyLog}\left[2,-e^{2 c+2 d x}\right]}{2 a^3 d^2}-$$
$$\frac{f\,\text{PolyLog}\left[2,e^{2 c+2 d x}\right]}{a d^2}+\frac{b^2 f\,\text{PolyLog}\left[2,e^{2 c+2 d x}\right]}{2 a^3 d^2}+\frac{b f\,\text{Sech}[c+d x]}{2 a^2 d^2}-\frac{b^3 f\,\text{Sech}[c+d x]}{2 a^2 \left(a^2+b^2\right) d^2}-$$
$$\frac{b^4 (e+f x)\,\text{Sech}[c+d x]^2}{2 a^3 \left(a^2+b^2\right) d}-\frac{b (e+f x)\,\text{Csch}[c+d x]\,\text{Sech}[c+d x]^2}{2 a^2 d}-\frac{b^2 f\,\text{Tanh}[c+d x]}{2 a^3 d^2}+$$
$$\frac{b^4 f\,\text{Tanh}[c+d x]}{2 a^3 \left(a^2+b^2\right) d^2}-\frac{b^3 (e+f x)\,\text{Sech}[c+d x]\,\text{Tanh}[c+d x]}{2 a^2 \left(a^2+b^2\right) d}-\frac{b^2 (e+f x)\,\text{Tanh}[c+d x]^2}{2 a^3 d}$$

Result (type 4, 3282 leaves):

$$8\left(\frac{\mathrm{i}\left(2a^6+3a^4b^2+b^6\right)\left(de-cf\right)\left(c+dx\right)}{16a^3\left(a^2+b^2\right)^2d^2}+\frac{\mathrm{i}\left(2a^6+3a^4b^2+b^6\right)f\left(c+dx\right)^2}{32a^3\left(a^2+b^2\right)^2d^2}+\right.$$

$$\frac{a^3 e\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{2\left(a^2+b^2\right)^2 d}+\frac{3ab^2 e\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{4\left(a^2+b^2\right)^2 d}-$$

$$\frac{b^6 e\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{4a^3\left(a^2+b^2\right)^2 d}-\frac{a^3 cf\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{2\left(a^2+b^2\right)^2 d^2}-$$

$$\frac{3ab^2 cf\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{4\left(a^2+b^2\right)^2 d^2}+\frac{b^6 cf\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{4a^3\left(a^2+b^2\right)^2 d^2}-$$

$$\frac{e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{4ad}+\frac{b^2 e\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{8a^3 d}+\frac{bf\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{8a^2d^2}+$$

$$\frac{cf\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{4ad^2}-\frac{b^2 cf\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{8a^3d^2}+\frac{1}{4\left(a^2+b^2\right)^2 d}$$

$$a^3 e\left(-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]+\mathrm{i}\,\text{Sinh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]\right)+\frac{1}{8\left(a^2+b^2\right)^2 d}$$

$$3ab^2 e\left(-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]+\mathrm{i}\,\text{Sinh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]\right)-\frac{1}{4\left(a^2+b^2\right)^2 d^2}$$

$$a^3 cf\left(-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]+\mathrm{i}\,\text{Sinh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]\right)-\frac{1}{8\left(a^2+b^2\right)^2 d^2}$$

$$3ab^2 cf\left(-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)+\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]+\mathrm{i}\,\text{Sinh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]\right)-$$

$$\frac{bf\,\text{Log}\left[\text{Sinh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]}{8a^2d^2}+\left(b^6 e\left(-\mathrm{i}\left(c+dx\right)+2\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]+\right.\right.$$

$$\left.\left.\text{Log}\left[-1+\text{Cosh}\left[c+dx\right]+\mathrm{i}\,\text{Sinh}\left[c+dx\right]\right]\right)\right)\Big/\left(16a^3\left(a^2+b^2\right)^2 d\right)-\left(b^6 cf\left(-\mathrm{i}\left(c+dx\right)+\right.\right.$$

$$\left.\left.2\,\text{ArcTanh}\left[1-2\,\mathrm{i}\,\text{Tanh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]+\text{Log}\left[-1+\text{Cosh}\left[c+dx\right]+\mathrm{i}\,\text{Sinh}\left[c+dx\right]\right]\right)\right)\Big/$$

$$\left(16a^3\left(a^2+b^2\right)^2 d^2\right)-\frac{b^6 e\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+dx\right]}{a}\right]}{8a^3\left(a^2+b^2\right)^2 d}+\frac{b^6 cf\,\text{Log}\left[1+\frac{b\,\text{Sinh}\left[c+dx\right]}{a}\right]}{8a^3\left(a^2+b^2\right)^2 d^2}-\frac{1}{2ad^2}$$

$$\mathrm{i}\,f\left(-\frac{1}{8}\,\mathrm{i}\left(c+dx\right)^2-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)\text{Log}\left[1+e^{-c-dx}\right]+\frac{1}{2}\,\mathrm{i}\,\text{PolyLog}\left[2,-e^{-c-dx}\right]\right)+\frac{1}{4a^3d^2}$$

$$\mathrm{i}\,b^2 f\left(-\frac{1}{8}\,\mathrm{i}\left(c+dx\right)^2-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)\text{Log}\left[1+e^{-c-dx}\right]+\frac{1}{2}\,\mathrm{i}\,\text{PolyLog}\left[2,-e^{-c-dx}\right]\right)+$$

$$\left(b^6 f\left(-\frac{1}{2}\,\mathrm{i}\left(c+dx\right)^2+\frac{1}{4}\,\mathrm{i}\left(3\pi\left(c+dx\right)+\left(1-\mathrm{i}\right)\left(c+dx\right)^2+\pi\,\text{Log}\left[2\right]+\right.\right.\right.$$

$$2\left(\pi-2\,\mathrm{i}\left(c+dx\right)\right)\text{Log}\left[1+\mathrm{i}\,e^{-c-dx}\right]-4\pi\,\text{Log}\left[1+e^{c+dx}\right]+4\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\left(c+dx\right)\right]\right]-$$

$$2\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+4\,i\,\text{PolyLog}\left[2,\,-i\,e^{-c-d\,x}\right]\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(8\,a^3\,\left(a^2+b^2\right)^2 d^2\right)-\frac{1}{4\,\left(a^2+b^2\right)^2 d^2}\,i\,a^3\,f\,\Bigg(\frac{1}{4}\,(c+d\,x)^2+$$

$$\frac{1}{4}\,\Bigg(-3\pi\,(c+d\,x)-(1-i)\,(c+d\,x)^2-\pi\,\text{Log}[2]-2\,(\pi-2\,i\,(c+d\,x))\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]+$$

$$4\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-4\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$2\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-4\,i\,\text{PolyLog}\left[2,\,-i\,e^{-c-d\,x}\right]\Bigg)-$$

$$\frac{1}{2}\,i\,\left(\frac{1}{2}\,(c+d\,x)\,\left(c+d\,x+4\,\text{Log}\left[1-e^{-c-d\,x}\right]\right)-2\,\text{PolyLog}\left[2,\,e^{-c-d\,x}\right]\right)\Bigg)-$$

$$\frac{1}{8\,\left(a^2+b^2\right)^2 d^2}\,3\,i\,a\,b^2\,f\,\Bigg(\frac{1}{4}\,(c+d\,x)^2+\frac{1}{4}\,\Bigg(-3\pi\,(c+d\,x)-(1-i)\,(c+d\,x)^2-\pi\,\text{Log}[2]-$$

$$2\,(\pi-2\,i\,(c+d\,x))\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]+4\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-4\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$2\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-4\,i\,\text{PolyLog}\left[2,\,-i\,e^{-c-d\,x}\right]\Bigg)-$$

$$\frac{1}{2}\,i\,\left(\frac{1}{2}\,(c+d\,x)\,\left(c+d\,x+4\,\text{Log}\left[1-e^{-c-d\,x}\right]\right)-2\,\text{PolyLog}\left[2,\,e^{-c-d\,x}\right]\right)\Bigg)+$$

$$\frac{1}{8\,a^3\,\left(a^2+b^2\right)^2 d^2}\,i\,b^6\,f\,\Bigg(\frac{1}{4}\,(c+d\,x)^2+\frac{1}{4}\,\Bigg(-3\pi\,(c+d\,x)-(1-i)\,(c+d\,x)^2-\pi\,\text{Log}[2]-$$

$$2\,(\pi-2\,i\,(c+d\,x))\,\text{Log}\left[1+i\,e^{-c-d\,x}\right]+4\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-4\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$2\pi\,\text{Log}\left[-\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]+i\,\text{Sinh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]-4\,i\,\text{PolyLog}\left[2,\,-i\,e^{-c-d\,x}\right]\Bigg)-$$

$$\frac{1}{2}\,i\,\left(\frac{1}{2}\,(c+d\,x)\,\left(c+d\,x+4\,\text{Log}\left[1-e^{-c-d\,x}\right]\right)-2\,\text{PolyLog}\left[2,\,e^{-c-d\,x}\right]\right)\Bigg)+$$

$$\Bigg(i\,a^3\,f\,\Bigg(-\frac{1}{4}\,e^{\frac{i\pi}{4}}\,(c+d\,x)^2+\frac{1}{\sqrt{2}}\Bigg(\frac{1}{4}\,\pi\,(c+d\,x)-\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-$$

$$2\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)\,\text{Log}\left[1-e^{2\,i\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]+\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$\frac{1}{2}\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right]\right]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(2\sqrt{2}\,\left(a^2+b^2\right)^2 d^2\right)+\Bigg(3\,i\,a\,b^2\,f\,\Bigg(-\frac{1}{4}\,e^{\frac{i\pi}{4}}\,(c+d\,x)^2+\frac{1}{\sqrt{2}}\Bigg(\frac{1}{4}\,\pi\,(c+d\,x)-\pi\,\text{Log}\left[1+e^{c+d\,x}\right]-$$

$$2\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)\,\text{Log}\left[1-e^{2\,i\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]+\pi\,\text{Log}\left[\text{Cosh}\left[\frac{1}{2}\,(c+d\,x)\right]\right]+$$

$$\frac{1}{2}\,\pi\,\text{Log}\left[\text{Sin}\left[\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right]\right]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,\left(\frac{\pi}{4}+\frac{1}{2}\,i\,(c+d\,x)\right)}\right]\Bigg)\Bigg)\Bigg)\Big/$$

$$\left(4\sqrt{2}\ \left(a^2+b^2\right)^2 d^2\right) - \frac{1}{8\,a^3\ \left(a^2+b^2\right)^2 d^2} b^7 f \left(\frac{\left(c+d\,x\right)\ \text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right]}{b} - \right.$$

$$\frac{1}{b}\,i\left(\frac{1}{2}\,i\,\left(\frac{\pi}{2}-i\,\left(c+d\,x\right)\right)^2 - 4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{i\,(a-i\,b)}{b}}}{\sqrt{2}}\right]\right.$$

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

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

$$\text{Log}\left[1+\frac{i\,\left(a+\sqrt{a^2+b^2}\right)\ e^{i\,\left(\frac{\pi}{2}-i\,(c+d\,x)\right)}}{b}\right] + \left(\frac{\pi}{2}-i\,\left(c+d\,x\right)\right)\ \text{Log}\left[a+b\,\text{Sinh}\left[c+d\,x\right]\right] +$$

$$i\left(\text{PolyLog}\left[2,-\frac{i\,\left(a-\sqrt{a^2+b^2}\right)\ e^{i\,\left(\frac{\pi}{2}-i\,(c+d\,x)\right)}}{b}\right] + \right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{i\,\left(a+\sqrt{a^2+b^2}\right)\ e^{i\,\left(\frac{\pi}{2}-i\,(c+d\,x)\right)}}{b}\right]\right)\right)\right) + \frac{1}{16\,\left(a^2+b^2\right)^2 d^2}$$

$$b\,\left(3\,a^2+5\,b^2\right)\ \left(2\,\left(d\,e-c\,f+f\,\left(c+d\,x\right)\right)\ \text{ArcTan}\left[\text{Cosh}\left[c+d\,x\right]+\text{Sinh}\left[c+d\,x\right]\right] - \right.$$
$$i\,f\,\text{PolyLog}\left[2,-i\,\left(\text{Cosh}\left[c+d\,x\right]+\text{Sinh}\left[c+d\,x\right]\right)\right] +$$
$$\left.i\,f\,\text{PolyLog}\left[2,i\,\left(\text{Cosh}\left[c+d\,x\right]+\text{Sinh}\left[c+d\,x\right]\right)\right]\right) +$$

$$\frac{1}{128\,a^2\ \left(a^2+b^2\right)\ d^2}\text{Csch}\left[c+d\,x\right]^2\,\text{Sech}\left[c+d\,x\right]^2\ \left(-4\,a\,b^2\,d\,e+4\,a\,b^2\,c\,f-4\,a\,b^2\,f\,\left(c+d\,x\right) - \right.$$
$$2\,a^2\,b\,f\,\text{Cosh}\left[c+d\,x\right]-8\,a^3\,d\,e\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]-4\,a\,b^2\,d\,e\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right] +$$
$$8\,a^3\,c\,f\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]+4\,a\,b^2\,c\,f\,\text{Cosh}\left[2\,\left(c+d\,x\right)\right]-8\,a^3\,f\,\left(c+d\,x\right)\ \text{Cosh}\left[2\,\left(c+d\,x\right)\right] -$$
$$4\,a\,b^2\,f\,\left(c+d\,x\right)\ \text{Cosh}\left[2\,\left(c+d\,x\right)\right]+2\,a^2\,b\,f\,\text{Cosh}\left[3\,\left(c+d\,x\right)\right]-2\,a^2\,b\,d\,e\,\text{Sinh}\left[c+d\,x\right] +$$
$$4\,b^3\,d\,e\,\text{Sinh}\left[c+d\,x\right]+2\,a^2\,b\,c\,f\,\text{Sinh}\left[c+d\,x\right]-4\,b^3\,c\,f\,\text{Sinh}\left[c+d\,x\right] -$$
$$2\,a^2\,b\,f\,\left(c+d\,x\right)\ \text{Sinh}\left[c+d\,x\right]+4\,b^3\,f\,\left(c+d\,x\right)\ \text{Sinh}\left[c+d\,x\right]-4\,a^3\,f\,\text{Sinh}\left[2\,\left(c+d\,x\right)\right] -$$
$$2\,a\,b^2\,f\,\text{Sinh}\left[2\,\left(c+d\,x\right)\right]+6\,a^2\,b\,d\,e\,\text{Sinh}\left[3\,\left(c+d\,x\right)\right]+4\,b^3\,d\,e\,\text{Sinh}\left[3\,\left(c+d\,x\right)\right] -$$
$$6\,a^2\,b\,c\,f\,\text{Sinh}\left[3\,\left(c+d\,x\right)\right]-4\,b^3\,c\,f\,\text{Sinh}\left[3\,\left(c+d\,x\right)\right]+6\,a^2\,b\,f\,\left(c+d\,x\right)\ \text{Sinh}\left[3\,\left(c+d\,x\right)\right] +$$

$$4 b^3 f (c + d x) \text{Sinh}[3 (c + d x)] - a b^2 f \text{Sinh}[4 (c + d x)]) \Bigg)$$

Problem 502: Attempted integration timed out after 120 seconds.

$$\int \frac{\text{Csch}[c + d x]^3 \text{Sech}[c + d x]^3}{(e + f x) (a + b \text{Sinh}[c + d x])} \, dx$$

Optimal (type 8, 39 leaves, 0 steps):

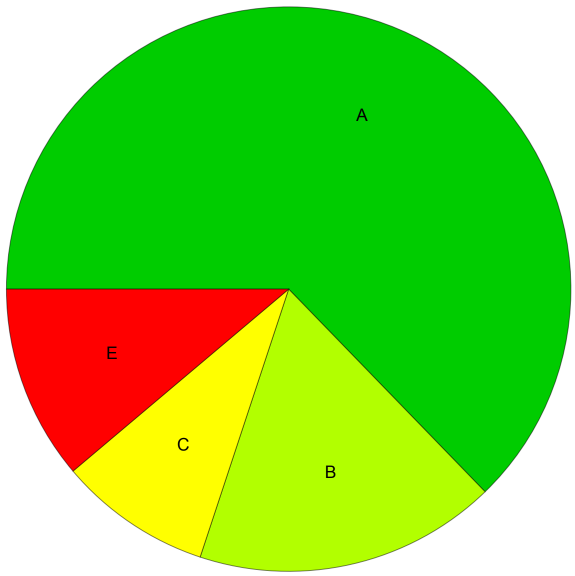
$$\text{Int}\left[\frac{\text{Csch}[c + d x]^3 \text{Sech}[c + d x]^3}{(e + f x) (a + b \text{Sinh}[c + d x])}, x\right]$$

Result (type 1, 1 leaves):

???

Summary of Integration Test Results

502 integration problems



A - 315 optimal antiderivatives

B - 87 more than twice size of optimal antiderivatives

C - 44 unnecessarily complex antiderivatives

D - 0 unable to integrate problems

E - 56 integration timeouts