Mathematica 11.3 Integration Test Results

Test results for the 348 problems in "4.1.10 (c+d x)^m (a+b sin)^n.m"

Problem 28: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 113 leaves, 6 steps):

$$-\frac{i (c+d x)^3}{b}-\frac{(c+d x)^3 \operatorname{Cot}[a+b x]}{b}+\frac{3 d (c+d x)^2 \operatorname{Log}\left[1-e^{2 i (a+b x)}\right]}{b^2}-\frac{3 i d^2 (c+d x) \operatorname{PolyLog}\left[2, e^{2 i (a+b x)}\right]}{b^3}+\frac{3 d^3 \operatorname{PolyLog}\left[3, e^{2 i (a+b x)}\right]}{2 b^4}$$

Result (type 4, 384 leaves):

$$-\frac{1}{4 b^4} d^3 e^{-i a} \operatorname{Csc}[a] \left(2 b^2 x^2 \left(2 b e^{2 i a} x+3 i \left(-1+e^{2 i a}\right) \operatorname{Log}\left[1-e^{2 i (a+b x)}\right]\right)+6 b \left(-1+e^{2 i a}\right) x \operatorname{PolyLog}\left[2, e^{2 i (a+b x)}\right]+3 i \left(-1+e^{2 i a}\right) \operatorname{PolyLog}\left[3, e^{2 i (a+b x)}\right]\right)+\left(3 c^2 d \operatorname{Csc}[a] \left(-b x \operatorname{Cos}[a]+\operatorname{Log}[\operatorname{Cos}[b x] \operatorname{Sin}[a]+\operatorname{Cos}[a] \operatorname{Sin}[b x]] \operatorname{Sin}[a]\right)\right) \Big/ \left(b^2 \left(\operatorname{Cos}[a]^2+\operatorname{Sin}[a]^2\right)\right)+\frac{1}{b} \operatorname{Csc}[a] \operatorname{Csc}[a+b x] \left(c^3 \operatorname{Sin}[b x]+3 c^2 d x \operatorname{Sin}[b x]+3 c d^2 x^2 \operatorname{Sin}[b x]+d^3 x^3 \operatorname{Sin}[b x]\right)-\left(3 c d^2 \operatorname{Csc}[a] \operatorname{Sec}[a] \left(b^2 e^{i \operatorname{ArcTan}[\operatorname{Tan}[a]]} x^2+\frac{1}{\sqrt{1+\operatorname{Tan}[a]^2}} \left(i b x \left(-\pi+2 \operatorname{ArcTan}[\operatorname{Tan}[a]]\right)-\pi \operatorname{Log}\left[1+e^{-2 i b x}\right]-2 \left(b x+\operatorname{ArcTan}[\operatorname{Tan}[a]]\right) \operatorname{Log}\left[1-e^{2 i (b x+\operatorname{ArcTan}[\operatorname{Tan}[a]])}\right]+\pi \operatorname{Log}[\operatorname{Cos}[b x]]+2 \operatorname{ArcTan}[\operatorname{Tan}[a]] \operatorname{Log}[\operatorname{Sin}[b x+\operatorname{ArcTan}[\operatorname{Tan}[a]]]]+i \operatorname{PolyLog}\left[2, e^{2 i (b x+\operatorname{ArcTan}[\operatorname{Tan}[a]])}\right]\right) \operatorname{Tan}[a]\right)\right) \Big/ \left(b^3 \sqrt{\operatorname{Sec}[a]^2 \left(\operatorname{Cos}[a]^2+\operatorname{Sin}[a]^2\right)}\right)$$

Problem 29: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 83 leaves, 5 steps):

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

Result (type 4, 245 leaves):

$$\left(2\,c\,d\,\text{Csc}[a]\,\left(-b\,x\,\text{Cos}[a]+\text{Log}[\text{Cos}[b\,x]\,\text{Sin}[a]+\text{Cos}[a]\,\text{Sin}[b\,x]]\,\text{Sin}[a]\right)\right)\Big/\left(b^2\,\left(\text{Cos}[a]^2+\text{Sin}[a]^2\right)\right)+\frac{1}{b}$$
$$\text{Csc}[a]\,\text{Csc}[a+b\,x]\,\left(c^2\,\text{Sin}[b\,x]+2\,c\,d\,x\,\text{Sin}[b\,x]+d^2\,x^2\,\text{Sin}[b\,x]\right)-\Bigg(d^2\,\text{Csc}[a]\,\text{Sec}[a]$$
$$\Bigg(b^2\,e^{i\,\text{ArcTan}[\text{Tan}[a]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[a]^2}}\left(i\,b\,x\,\left(-\pi+2\,\text{ArcTan}[\text{Tan}[a]]\right)-\pi\,\text{Log}\left[1+e^{-2\,i\,b\,x}\right]-\right.$$
$$2\,\left(b\,x+\text{ArcTan}[\text{Tan}[a]]\right)\,\text{Log}\left[1-e^{2\,i\,(b\,x+\text{ArcTan}[\text{Tan}[a]])}\right]+\pi\,\text{Log}[\text{Cos}[b\,x]]+$$
$$\left.2\,\text{ArcTan}[\text{Tan}[a]]\,\text{Log}[\text{Sin}[b\,x+\text{ArcTan}[\text{Tan}[a]]]]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,(b\,x+\text{ArcTan}[\text{Tan}[a]])}\right]\right)$$
$$\text{Tan}[a]\Bigg)\Bigg)\Big/\left(b^3\,\sqrt{\text{Sec}[a]^2\,\left(\text{Cos}[a]^2+\text{Sin}[a]^2\right)}\right)$$

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

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

Optimal (type 4, 180 leaves, 9 steps):

$$-\frac{(c+d\,x)^2\,\text{ArcTanh}\left[e^{i\,(a+b\,x)}\right]}{b}-\frac{d^2\,\text{ArcTanh}[\text{Cos}[a+b\,x]]}{b^3}-\frac{d\,(c+d\,x)\,\text{Csc}[a+b\,x]}{b^2}-$$
$$\frac{(c+d\,x)^2\,\text{Cot}[a+b\,x]\,\text{Csc}[a+b\,x]}{2\,b}+\frac{i\,d\,(c+d\,x)\,\text{PolyLog}\left[2,\,-e^{i\,(a+b\,x)}\right]}{b^2}-$$
$$\frac{i\,d\,(c+d\,x)\,\text{PolyLog}\left[2,\,e^{i\,(a+b\,x)}\right]}{b^2}-\frac{d^2\,\text{PolyLog}\left[3,\,-e^{i\,(a+b\,x)}\right]}{b^3}+\frac{d^2\,\text{PolyLog}\left[3,\,e^{i\,(a+b\,x)}\right]}{b^3}$$

Result (type 4, 471 leaves):

$$-\frac{d\,(c+d\,x)\,\text{Csc}[a]}{b^2}+\frac{\left(-c^2-2\,c\,d\,x-d^2\,x^2\right)\,\text{Csc}\left[\frac{a}{2}+\frac{b\,x}{2}\right]^2}{8\,b}+$$
$$\frac{1}{2\,b^3}\left(b^2\,c^2\,\text{Log}\left[1-e^{i\,(a+b\,x)}\right]+2\,d^2\,\text{Log}\left[1-e^{i\,(a+b\,x)}\right]+2\,b^2\,c\,d\,x\,\text{Log}\left[1-e^{i\,(a+b\,x)}\right]+\right.$$
$$b^2\,d^2\,x^2\,\text{Log}\left[1-e^{i\,(a+b\,x)}\right]-b^2\,c^2\,\text{Log}\left[1+e^{i\,(a+b\,x)}\right]-2\,d^2\,\text{Log}\left[1+e^{i\,(a+b\,x)}\right]-$$
$$2\,b^2\,c\,d\,x\,\text{Log}\left[1+e^{i\,(a+b\,x)}\right]-b^2\,d^2\,x^2\,\text{Log}\left[1+e^{i\,(a+b\,x)}\right]+2\,i\,b\,d\,(c+d\,x)\,\text{PolyLog}\left[2,\,-e^{i\,(a+b\,x)}\right]-$$
$$\left.2\,i\,b\,d\,(c+d\,x)\,\text{PolyLog}\left[2,\,e^{i\,(a+b\,x)}\right]-2\,d^2\,\text{PolyLog}\left[3,\,-e^{i\,(a+b\,x)}\right]+2\,d^2\,\text{PolyLog}\left[3,\,e^{i\,(a+b\,x)}\right]\right)+$$
$$\frac{\left(c^2+2\,c\,d\,x+d^2\,x^2\right)\,\text{Sec}\left[\frac{a}{2}+\frac{b\,x}{2}\right]^2}{8\,b}+\frac{\text{Sec}\left[\frac{a}{2}\right]\,\text{Sec}\left[\frac{a}{2}+\frac{b\,x}{2}\right]\,\left(-c\,d\,\text{Sin}\left[\frac{b\,x}{2}\right]-d^2\,x\,\text{Sin}\left[\frac{b\,x}{2}\right]\right)}{2\,b^2}+$$
$$\frac{\text{Csc}\left[\frac{a}{2}\right]\,\text{Csc}\left[\frac{a}{2}+\frac{b\,x}{2}\right]\,\left(c\,d\,\text{Sin}\left[\frac{b\,x}{2}\right]+d^2\,x\,\text{Sin}\left[\frac{b\,x}{2}\right]\right)}{2\,b^2}$$

Problem 35: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 109 leaves, 6 steps):

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

Result (type 4, 292 leaves):

$$-\frac{d x \operatorname{Csc}\left[\frac{a}{2} + \frac{b x}{2}\right]^2}{8 b} - \frac{c \operatorname{Csc}\left[\frac{1}{2} (a + b x)\right]^2}{8 b} - \frac{c \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2} (a + b x)\right]\right]}{2 b} + \frac{c \operatorname{Log}\left[\operatorname{Sin}\left[\frac{1}{2} (a + b x)\right]\right]}{2 b} + \frac{1}{2 b^2} d \left((a + b x) \left(\operatorname{Log}\left[1 - e^{i (a+b x)}\right] - \operatorname{Log}\left[1 + e^{i (a+b x)}\right]\right) - a \operatorname{Log}\left[\operatorname{Tan}\left[\frac{1}{2} (a + b x)\right]\right] + i \left(\operatorname{PolyLog}\left[2, -e^{i (a+b x)}\right] - \operatorname{PolyLog}\left[2, e^{i (a+b x)}\right]\right)\right) + \frac{d x \operatorname{Sec}\left[\frac{a}{2} + \frac{b x}{2}\right]^2}{8 b} + \frac{c \operatorname{Sec}\left[\frac{1}{2} (a + b x)\right]^2}{8 b} + \frac{d \operatorname{Csc}\left[\frac{a}{2}\right] \operatorname{Csc}\left[\frac{a}{2} + \frac{b x}{2}\right] \operatorname{Sin}\left[\frac{b x}{2}\right]}{4 b^2} - \frac{d \operatorname{Sec}\left[\frac{a}{2}\right] \operatorname{Sec}\left[\frac{a}{2} + \frac{b x}{2}\right] \operatorname{Sin}\left[\frac{b x}{2}\right]}{4 b^2}$$

Problem 52: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Sin}[a + b x]^2}{(c + d x)^{9/2}} \, dx$$

Optimal (type 4, 247 leaves, 11 steps):

$$-\frac{16 b^2}{105 d^3 (c + d x)^{3/2}} - \frac{128 b^{7/2} \sqrt{\pi} \operatorname{Cos}\left[2 a - \frac{2 b c}{d}\right] \operatorname{FresnelC}\left[\frac{2 \sqrt{b} \sqrt{c+d x}}{\sqrt{d} \sqrt{\pi}}\right]}{105 d^{9/2}} + \frac{128 b^{7/2} \sqrt{\pi} \operatorname{FresnelS}\left[\frac{2 \sqrt{b} \sqrt{c+d x}}{\sqrt{d} \sqrt{\pi}}\right] \operatorname{Sin}\left[2 a - \frac{2 b c}{d}\right]}{105 d^{9/2}} - \frac{8 b \operatorname{Cos}[a + b x] \operatorname{Sin}[a + b x]}{35 d^2 (c + d x)^{5/2}} + \frac{128 b^3 \operatorname{Cos}[a + b x] \operatorname{Sin}[a + b x]}{105 d^4 \sqrt{c + d x}} - \frac{2 \operatorname{Sin}[a + b x]^2}{7 d (c + d x)^{7/2}} + \frac{32 b^2 \operatorname{Sin}[a + b x]^2}{105 d^3 (c + d x)^{3/2}}$$

Result (type 4, 988 leaves):

$$-\frac{1}{7 d (c + d x)^{7/2}} +$$

$$\frac{1}{2}\left(-\text{Cos}[2\,a]\left(-\frac{1}{7\,d}32\sqrt{2}\left(\frac{b}{d}\right)^{7/2}\text{Cos}\left[\frac{b\,c}{d}\right]\,\text{Sin}\left[\frac{b\,c}{d}\right]\left(\frac{\text{Sin}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{8\sqrt{2}\left(\frac{b}{d}\right)^{7/2}(c+d\,x)^{7/2}}+\frac{2}{5}\right.\right.\right.$$

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

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

$$\frac{1}{7\,d}16\sqrt{2}\left(\frac{b}{d}\right)^{7/2}\text{Cos}\left[\frac{2\,b\,c}{d}\right]\left(\frac{\text{Cos}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{8\sqrt{2}\left(\frac{b}{d}\right)^{7/2}(c+d\,x)^{7/2}}-\right.$$

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

$$\left.\left.\left.\left.2\left(-\sqrt{2\,\pi}\ \text{FresnelC}\left[\frac{2\sqrt{\frac{b}{d}}\sqrt{c+d\,x}}{\sqrt{\pi}}\right]+\frac{\text{Sin}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{\sqrt{2}\sqrt{\frac{b}{d}}\sqrt{c+d\,x}}\right)\right)\right)\right)\right)+$$

$$2\,\text{Cos}[a]\,\text{Sin}[a]\left(-\frac{1}{7\,d}16\sqrt{2}\left(\frac{b}{d}\right)^{7/2}\left(\text{Cos}\left[\frac{b\,c}{d}\right]-\text{Sin}\left[\frac{b\,c}{d}\right]\right)\left(\text{Cos}\left[\frac{b\,c}{d}\right]+\text{Sin}\left[\frac{b\,c}{d}\right]\right)\right.$$

$$\left(\frac{\text{Sin}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{8\sqrt{2}\left(\frac{b}{d}\right)^{7/2}(c+d\,x)^{7/2}}+\frac{2}{5}\left(\frac{\text{Cos}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{4\sqrt{2}\left(\frac{b}{d}\right)^{5/2}(c+d\,x)^{5/2}}-\frac{2}{3}\left(2\left(\frac{\text{Cos}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{\sqrt{2}\sqrt{\frac{b}{d}}\sqrt{c+d\,x}}+\right.\right.\right.\right.$$

$$\sqrt{2\pi}\,\text{FresnelS}\left[\frac{2\sqrt{\frac{b}{d}}\sqrt{c+d\,x}}{\sqrt{\pi}}\right]\Bigg)+\frac{\text{Sin}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{2\sqrt{2}\left(\frac{b}{d}\right)^{3/2}(c+d\,x)^{3/2}}\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{7\,d}16\sqrt{2}\left(\frac{b}{d}\right)^{7/2}\text{Sin}\left[\frac{2\,b\,c}{d}\right]\left(\frac{\text{Cos}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{8\sqrt{2}\left(\frac{b}{d}\right)^{7/2}(c+d\,x)^{7/2}}-\right.$$

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

$$\left.\left.\left.2\left(-\sqrt{2\pi}\,\text{FresnelC}\left[\frac{2\sqrt{\frac{b}{d}}\sqrt{c+d\,x}}{\sqrt{\pi}}\right]+\frac{\text{Sin}\left[\frac{2\,b\,(c+d\,x)}{d}\right]}{\sqrt{2}\sqrt{\frac{b}{d}}\sqrt{c+d\,x}}\right)\right)\right)\right)\Bigg)\Bigg)$$

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

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

Optimal (type 4, 356 leaves, 19 steps):

$$-\frac{2 b^{5/2} \sqrt{2\pi} \operatorname{Cos}\left[a-\frac{b c}{d}\right] \operatorname{FresnelC}\left[\frac{\sqrt{b} \sqrt{\frac{2}{\pi}} \sqrt{c+d x}}{\sqrt{d}}\right]}{5 d^{7/2}}+\frac{6 b^{5/2} \sqrt{6\pi} \operatorname{Cos}\left[3 a-\frac{3 b c}{d}\right] \operatorname{FresnelC}\left[\frac{\sqrt{b} \sqrt{\frac{6}{\pi}} \sqrt{c+d x}}{\sqrt{d}}\right]}{5 d^{7/2}}-\frac{6 b^{5/2} \sqrt{6\pi} \operatorname{FresnelS}\left[\frac{\sqrt{b} \sqrt{\frac{6}{\pi}} \sqrt{c+d x}}{\sqrt{d}}\right] \operatorname{Sin}\left[3 a-\frac{3 b c}{d}\right]}{5 d^{7/2}}+\frac{2 b^{5/2} \sqrt{2\pi} \operatorname{FresnelS}\left[\frac{\sqrt{b} \sqrt{\frac{2}{\pi}} \sqrt{c+d x}}{\sqrt{d}}\right] \operatorname{Sin}\left[a-\frac{b c}{d}\right]}{5 d^{7/2}}-\frac{16 b^2 \operatorname{Sin}[a+b x]}{5 d^3 \sqrt{c+d x}}-\frac{4 b \operatorname{Cos}[a+b x] \operatorname{Sin}[a+b x]^2}{5 d^2 (c+d x)^{3/2}}-\frac{2 \operatorname{Sin}[a+b x]^3}{5 d (c+d x)^{5/2}}+\frac{24 b^2 \operatorname{Sin}[a+b x]^3}{5 d^3 \sqrt{c+d x}}$$

Result (type 4, 1429 leaves):

$$\frac{3}{4}\left(\operatorname{Cos}[a]\left(\frac{1}{5 d}2\left(\frac{b}{d}\right)^{5/2}\operatorname{Sin}\left[\frac{b c}{d}\right]\left(\frac{\operatorname{Cos}\left[\frac{b(c+d x)}{d}\right]}{\left(\frac{b}{d}\right)^{5/2}(c+d x)^{5/2}}-\frac{2}{3}\left(2\left(\frac{\operatorname{Cos}\left[\frac{b(c+d x)}{d}\right]}{\sqrt{\frac{b}{d}}\sqrt{c+d x}}+\sqrt{2\pi}\operatorname{FresnelS}\left[\sqrt{\frac{b}{d}}\sqrt{\frac{2}{\pi}}\sqrt{c+d x}\right]\right)+\frac{\operatorname{Sin}\left[\frac{b(c+d x)}{d}\right]}{\left(\frac{b}{d}\right)^{3/2}(c+d x)^{3/2}}\right)\right)-\frac{1}{5 d}2\left(\frac{b}{d}\right)^{5/2}\operatorname{Cos}\left[\frac{b c}{d}\right]\left(\frac{\operatorname{Sin}\left[\frac{b(c+d x)}{d}\right]}{\left(\frac{b}{d}\right)^{5/2}(c+d x)^{5/2}}+\frac{2}{3}\left(\frac{\operatorname{Cos}\left[\frac{b(c+d x)}{d}\right]}{\left(\frac{b}{d}\right)^{3/2}(c+d x)^{3/2}}-2\left(-\sqrt{2\pi}\operatorname{FresnelC}\left[\sqrt{\frac{b}{d}}\sqrt{\frac{2}{\pi}}\sqrt{c+d x}\right]+\frac{\operatorname{Sin}\left[\frac{b(c+d x)}{d}\right]}{\sqrt{\frac{b}{d}}\sqrt{c+d x}}\right)\right)\right)\right)+\operatorname{Sin}[a]\left(-\frac{1}{5 d}2\left(\frac{b}{d}\right)^{5/2}\operatorname{Cos}\left[\frac{b c}{d}\right]\left(\frac{\operatorname{Cos}\left[\frac{b(c+d x)}{d}\right]}{\left(\frac{b}{d}\right)^{5/2}(c+d x)^{5/2}}-\right.\right.$$

$$\frac{2}{3}\left(2\left(\frac{\text{Cos}\left[\frac{b\,(c+d\,x)}{d}\right]}{\sqrt{\frac{b}{d}}\,\sqrt{c+d\,x}}+\sqrt{2\,\pi}\,\text{FresnelS}\left[\sqrt{\frac{b}{d}}\,\sqrt{\frac{2}{\pi}}\,\sqrt{c+d\,x}\right]\right)+\frac{\text{Sin}\left[\frac{b\,(c+d\,x)}{d}\right]}{\left(\frac{b}{d}\right)^{3/2}\,(c+d\,x)^{3/2}}\right)\Bigg)\Bigg)-$$

$$\frac{1}{5\,d}2\,\left(\frac{b}{d}\right)^{5/2}\,\text{Sin}\left[\frac{b\,c}{d}\right]\,\left(\frac{\text{Sin}\left[\frac{b\,(c+d\,x)}{d}\right]}{\left(\frac{b}{d}\right)^{5/2}\,(c+d\,x)^{5/2}}+\frac{2}{3}\left(\frac{\text{Cos}\left[\frac{b\,(c+d\,x)}{d}\right]}{\left(\frac{b}{d}\right)^{3/2}\,(c+d\,x)^{3/2}}-\right.\right.$$

$$\left.\left.2\left(-\sqrt{2\,\pi}\,\text{FresnelC}\left[\sqrt{\frac{b}{d}}\,\sqrt{\frac{2}{\pi}}\,\sqrt{c+d\,x}\right]+\frac{\text{Sin}\left[\frac{b\,(c+d\,x)}{d}\right]}{\sqrt{\frac{b}{d}}\,\sqrt{c+d\,x}}\right)\right)\right)\Bigg)\Bigg)\Bigg)+$$

$$\frac{1}{4}\left(-\text{Cos}[3\,a]\,\left(\frac{1}{5\,d}18\,\sqrt{3}\,\left(\frac{b}{d}\right)^{5/2}\,\text{Sin}\left[\frac{3\,b\,c}{d}\right]\,\left(\frac{\text{Cos}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{9\,\sqrt{3}\,\left(\frac{b}{d}\right)^{5/2}\,(c+d\,x)^{5/2}}-\frac{2}{3}\left(2\left(\frac{\text{Cos}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{\sqrt{3}\,\sqrt{\frac{b}{d}}\,\sqrt{c+d\,x}}+\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\sqrt{2\,\pi}\,\text{FresnelS}\left[\sqrt{\frac{b}{d}}\,\sqrt{\frac{6}{\pi}}\,\sqrt{c+d\,x}\right]\right)+\frac{\text{Sin}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{3\,\sqrt{3}\,\left(\frac{b}{d}\right)^{3/2}\,(c+d\,x)^{3/2}}\right)\right)-\frac{1}{5\,d}$$

$$18\,\sqrt{3}\,\left(\frac{b}{d}\right)^{5/2}\,\text{Cos}\left[\frac{3\,b\,c}{d}\right]\,\left(\frac{\text{Sin}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{9\,\sqrt{3}\,\left(\frac{b}{d}\right)^{5/2}\,(c+d\,x)^{5/2}}+\frac{2}{3}\left(\frac{\text{Cos}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{3\,\sqrt{3}\,\left(\frac{b}{d}\right)^{3/2}\,(c+d\,x)^{3/2}}-\right.\right.$$

$$\left.\left.2\left(-\sqrt{2\,\pi}\,\text{FresnelC}\left[\sqrt{\frac{b}{d}}\,\sqrt{\frac{6}{\pi}}\,\sqrt{c+d\,x}\right]+\frac{\text{Sin}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{\sqrt{3}\,\sqrt{\frac{b}{d}}\,\sqrt{c+d\,x}}\right)\right)\right)\Bigg)-$$

$$\text{Sin}[3\,a]\,\left(-\frac{1}{5\,d}18\,\sqrt{3}\,\left(\frac{b}{d}\right)^{5/2}\,\text{Cos}\left[\frac{3\,b\,c}{d}\right]\,\left(\frac{\text{Cos}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{9\,\sqrt{3}\,\left(\frac{b}{d}\right)^{5/2}\,(c+d\,x)^{5/2}}-\frac{2}{3}\left(2\left(\frac{\text{Cos}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{\sqrt{3}\,\sqrt{\frac{b}{d}}\,\sqrt{c+d\,x}}+\right.\right.\right.\right.$$

$$\sqrt{2\pi}\ \text{FresnelS}\left[\sqrt{\frac{b}{d}}\ \sqrt{\frac{6}{\pi}}\ \sqrt{c+d\,x}\right]) + \frac{\text{Sin}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{3\,\sqrt{3}\ \left(\frac{b}{d}\right)^{3/2}\ (c+d\,x)^{3/2}}))-\frac{1}{5\,d}$$

$$18\,\sqrt{3}\ \left(\frac{b}{d}\right)^{5/2}\ \text{Sin}\left[\frac{3\,b\,c}{d}\right]\ (\frac{\text{Sin}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{9\,\sqrt{3}\ \left(\frac{b}{d}\right)^{5/2}\ (c+d\,x)^{5/2}}+\frac{2}{3}\ (\frac{\text{Cos}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{3\,\sqrt{3}\ \left(\frac{b}{d}\right)^{3/2}\ (c+d\,x)^{3/2}}-$$

$$2\ (-\sqrt{2\pi}\ \text{FresnelC}\left[\sqrt{\frac{b}{d}}\ \sqrt{\frac{6}{\pi}}\ \sqrt{c+d\,x}\right]+\frac{\text{Sin}\left[\frac{3\,b\,(c+d\,x)}{d}\right]}{\sqrt{3}\ \sqrt{\frac{b}{d}}\ \sqrt{c+d\,x}})))))$$

Problem 68: Result unnecessarily involves higher level functions and more than twice size of optimal antiderivative.

$$\int \left(\frac{x^2}{\text{Sin}[e+f\,x]^{3/2}}+x^2\,\sqrt{\text{Sin}[e+f\,x]}\right) dx$$

Optimal (type 4, 62 leaves, 3 steps):

$$-\frac{16\ \text{EllipticE}\left[\frac{1}{2}\left(e-\frac{\pi}{2}+f\,x\right),\,2\right]}{f^3}-\frac{2\,x^2\,\text{Cos}[e+f\,x]}{f\,\sqrt{\text{Sin}[e+f\,x]}}+\frac{8\,x\,\sqrt{\text{Sin}[e+f\,x]}}{f^2}$$

Result (type 5, 185 leaves):

$$\left(8\,e^{-i\,f\,x}\,\sqrt{2-2\,e^{2\,i\,(e+f\,x)}}\ \left(3\ \text{Hypergeometric2F1}\left[-\frac{1}{4},\,\frac{1}{2},\,\frac{3}{4},\,e^{2\,i\,(e+f\,x)}\right]+\right.\right.$$
$$\left.\left.e^{2\,i\,f\,x}\ \text{Hypergeometric2F1}\left[\frac{1}{2},\,\frac{3}{4},\,\frac{7}{4},\,e^{2\,i\,(e+f\,x)}\right]\right)\ \text{Sec}[e]\right)\Big/$$
$$\left(3\,\sqrt{-i\,e^{-i\,(e+f\,x)}\ \left(-1+e^{2\,i\,(e+f\,x)}\right)}\ f^3\right)-\frac{1}{f^3\,\sqrt{\text{Sin}[e+f\,x]}}$$
$$\text{Sec}[e]\ \left(\left(8+f^2\,x^2\right)\,\text{Cos}[f\,x]+\left(-8+f^2\,x^2\right)\,\text{Cos}[2\,e+f\,x]-8\,f\,x\,\text{Cos}[e]\ \text{Sin}[e+f\,x]\right)$$

Problem 109: Result more than twice size of optimal antiderivative.

$$\int \frac{c+d\,x}{a+a\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 60 leaves, 3 steps):

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

Result (type 3, 148 leaves):

$$\left(-d f x \operatorname{Cos}\left[e+\frac{f x}{2}\right]+2 d \operatorname{Cos}\left[\frac{f x}{2}\right] \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right]+2 c f \operatorname{Sin}\left[\frac{f x}{2}\right]+d f x \operatorname{Sin}\left[\frac{f x}{2}\right]+2 d \operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right] \operatorname{Sin}\left[e+\frac{f x}{2}\right]\right) \Big/ \left(a f^2\left(\operatorname{Cos}\left[\frac{e}{2}\right]+\operatorname{Sin}\left[\frac{e}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{1}{2}(e+f x)\right]+\operatorname{Sin}\left[\frac{1}{2}(e+f x)\right]\right)\right)$$

Problem 112: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 309 leaves, 10 steps):

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

Result (type 4, 719 leaves):

$$-\frac{1}{3\,a^2\,f^3}$$
$$\Bigg(\frac{1}{\text{Cos}[e]+i\,(1+\text{Sin}[e])}\,6\,d\,(\text{Cos}[e]+i\,\text{Sin}[e])\,\Big(2\,i\,d^2\,x+i\,c^2\,f^2\,x+c\,d\,f^2\,x^2\,\text{Cos}[e]+\frac{1}{3}\,d^2\,f^2$$
$$x^3\,(\text{Cos}[e]-i\,\text{Sin}[e])-i\,c\,d\,f^2\,x^2\,\text{Sin}[e]+(2\,d^2+c^2\,f^2)\,x\,(\text{Cos}[e]-i\,\text{Sin}[e])$$
$$(1-i\,\text{Cos}[e]+\text{Sin}[e])+\frac{1}{f}d^2\,(2\,f\,x+2\,\text{ArcTan}[\text{Cos}[e+f\,x]+i\,\text{Sin}[e+f\,x]]+$$
$$i\,\text{Log}[1+\text{Cos}[2\,(e+f\,x)]+i\,\text{Sin}[2\,(e+f\,x)]])\,(i\,\text{Cos}[e]+\text{Sin}[e])$$
$$(\text{Cos}[e]+i\,(1+\text{Sin}[e]))+\frac{1}{2}\,c^2\,f\,(2\,f\,x+2\,\text{ArcTan}[\text{Cos}[e+f\,x]+i\,\text{Sin}[e+f\,x]]+$$
$$i\,\text{Log}[1+\text{Cos}[2\,(e+f\,x)]+i\,\text{Sin}[2\,(e+f\,x)]])\,(i\,\text{Cos}[e]+\text{Sin}[e])$$
$$(\text{Cos}[e]+i\,(1+\text{Sin}[e]))+c\,d\,(f\,x\,(f\,x+2\,i\,\text{Log}[1-i\,\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]])+$$
$$2\,\text{PolyLog}[2,\,i\,\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]])\,(i\,\text{Cos}[e]+\text{Sin}[e])$$
$$(\text{Cos}[e]+i\,(1+\text{Sin}[e]))+\frac{1}{3\,f}d^2\,(f^2\,x^2\,(f\,x+3\,i\,\text{Log}[1-i\,\text{Cos}[e+f\,x]+\text{Sin}[e+f\,x]])+$$
$$6\,f\,x\,\text{PolyLog}[2,\,i\,\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]]+6\,i\,\text{PolyLog}[3,$$
$$i\,\text{Cos}[e+f\,x]-\text{Sin}[e+f\,x]])\,(i\,\text{Cos}[e]+\text{Sin}[e])\,(\text{Cos}[e]+i\,(1+\text{Sin}[e]))\Big)\Bigg)+$$
$$\Bigg((c+d\,x)\,\Big(3\,d\,f\,(c+d\,x)\,\text{Cos}\Big[\frac{f\,x}{2}\Big]-6\,d^2\,\text{Cos}\Big[e+\frac{f\,x}{2}\Big]+6\,d^2\,\text{Cos}\Big[e+\frac{3\,f\,x}{2}\Big]+$$
$$c^2\,f^2\,\text{Cos}\Big[e+\frac{3\,f\,x}{2}\Big]+2\,c\,d\,f^2\,x\,\text{Cos}\Big[e+\frac{3\,f\,x}{2}\Big]+d^2\,f^2\,x^2\,\text{Cos}\Big[e+\frac{3\,f\,x}{2}\Big]-$$
$$12\,d^2\,\text{Sin}\Big[\frac{f\,x}{2}\Big]-3\,c^2\,f^2\,\text{Sin}\Big[\frac{f\,x}{2}\Big]-6\,c\,d\,f^2\,x\,\text{Sin}\Big[\frac{f\,x}{2}\Big]-$$
$$3\,d^2\,f^2\,x^2\,\text{Sin}\Big[\frac{f\,x}{2}\Big]+3\,c\,d\,f\,\text{Sin}\Big[e+\frac{f\,x}{2}\Big]+3\,d^2\,f\,x\,\text{Sin}\Big[e+\frac{f\,x}{2}\Big]\Big)\Bigg)\Big/$$
$$\left(\left(\text{Cos}\Big[\frac{e}{2}\Big]+\text{Sin}\Big[\frac{e}{2}\Big]\right)\left(\text{Cos}\Big[\frac{1}{2}\,(e+f\,x)\Big]+\text{Sin}\Big[\frac{1}{2}\,(e+f\,x)\Big]\right)^3\right)$$

Problem 119: Result more than twice size of optimal antiderivative.

$$\int\frac{c+d\,x}{a-a\,\text{Sin}[e+f\,x]}\,dx$$

Optimal (type 3, 59 leaves, 3 steps):

$$\frac{2\,d\,\text{Log}\Big[\text{Cos}\Big[\frac{e}{2}+\frac{\pi}{4}+\frac{f\,x}{2}\Big]\Big]}{a\,f^2}+\frac{(c+d\,x)\,\text{Tan}\Big[\frac{e}{2}+\frac{\pi}{4}+\frac{f\,x}{2}\Big]}{a\,f}$$

Result (type 3, 155 leaves):

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

Problem 132: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(a + a \,\text{Sin}[e + f x])^{3/2}}{x^2} \, dx$$

Optimal (type 4, 263 leaves, 9 steps):

$$-\frac{3}{4} a f \,\text{CosIntegral}\left[\frac{f x}{2}\right] \text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \text{Sin}\left[\frac{1}{4} (2 e - \pi)\right] \sqrt{a + a \,\text{Sin}[e + f x]} + \frac{3}{4} a f \,\text{CosIntegral}\left[\frac{3 f x}{2}\right] \text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \text{Sin}\left[\frac{1}{4} (6 e + \pi)\right] \sqrt{a + a \,\text{Sin}[e + f x]} - \frac{2 a \,\text{Sin}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right]^2 \sqrt{a + a \,\text{Sin}[e + f x]}}{x} - \frac{3}{4} a f \,\text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \text{Sin}\left[\frac{1}{4} (2 e + \pi)\right] \sqrt{a + a \,\text{Sin}[e + f x]} \,\text{SinIntegral}\left[\frac{f x}{2}\right] + \frac{3}{4} a f \,\text{Cos}\left[\frac{1}{4} (6 e + \pi)\right] \text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \sqrt{a + a \,\text{Sin}[e + f x]} \,\text{SinIntegral}\left[\frac{3 f x}{2}\right]$$

Result (type 4, 226 leaves):

$$\left(i \left(-i a e^{-i (e+f x)} \left(i + e^{i (e+f x)}\right)^2\right)^{3/2} \left(2 - 6 i e^{i (e+f x)} - 6 e^{2 i (e+f x)} + 2 i e^{3 i (e+f x)} + 3 e^{i e+\frac{3 i f x}{2}} f x \,\text{ExpIntegralEi}\left[-\frac{1}{2} i f x\right] + 3 i e^{2 i e+\frac{3 i f x}{2}} f x \,\text{ExpIntegralEi}\left[\frac{i f x}{2}\right] + 3 i e^{\frac{3 i f x}{2}} f x \,\text{ExpIntegralEi}\left[-\frac{3}{2} i f x\right] + 3 e^{\frac{3}{2} i (2 e+f x)} f x \,\text{ExpIntegralEi}\left[\frac{3 i f x}{2}\right]\right)\right) \Big/ \left(4 \sqrt{2} \left(i + e^{i (e+f x)}\right)^3 x\right)$$

Problem 133: Result unnecessarily involves imaginary or complex numbers.

$$\int \frac{(a + a \,\text{Sin}[e + f x])^{3/2}}{x^3} \, dx$$

Optimal (type 4, 332 leaves, 13 steps):

$$-\frac{9}{16} a f^2 \,\text{Cos}\left[\frac{3}{4} (2 e - \pi)\right] \text{CosIntegral}\left[\frac{3 f x}{2}\right] \text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \sqrt{a + a \,\text{Sin}[e + f x]} - \frac{3}{16} a f^2 \,\text{CosIntegral}\left[\frac{f x}{2}\right] \text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \text{Sin}\left[\frac{1}{4} (2 e + \pi)\right] \sqrt{a + a \,\text{Sin}[e + f x]} - \frac{3 a f \,\text{Cos}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \text{Sin}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \sqrt{a + a \,\text{Sin}[e + f x]}}{2 x} - \frac{a \,\text{Sin}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right]^2 \sqrt{a + a \,\text{Sin}[e + f x]}}{x^2} - \frac{3}{16} a f^2 \,\text{Cos}\left[\frac{1}{4} (2 e + \pi)\right] \text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \sqrt{a + a \,\text{Sin}[e + f x]} \,\text{SinIntegral}\left[\frac{f x}{2}\right] + \frac{9}{16} a f^2 \,\text{Csc}\left[\frac{e}{2} + \frac{\pi}{4} + \frac{f x}{2}\right] \text{Sin}\left[\frac{3}{4} (2 e - \pi)\right] \sqrt{a + a \,\text{Sin}[e + f x]} \,\text{SinIntegral}\left[\frac{3 f x}{2}\right]$$

Result (type 4, 295 leaves):

$$-\frac{1}{16\sqrt{2}\left(\mathrm{i}+e^{\mathrm{i}(e+fx)}\right)^3 x^2}\mathrm{i}\left(-\mathrm{i}\,a\,e^{-\mathrm{i}(e+fx)}\left(\mathrm{i}+e^{\mathrm{i}(e+fx)}\right)^2\right)^{3/2}\left(-4+12\,\mathrm{i}\,e^{\mathrm{i}(e+fx)}+12\,e^{2\mathrm{i}(e+fx)}-4\,\mathrm{i}\,e^{3\mathrm{i}(e+fx)}+6\,\mathrm{i}\,f x+6\,e^{\mathrm{i}(e+fx)}f x+6\,\mathrm{i}\,e^{2\mathrm{i}(e+fx)}f x+6\,e^{3\mathrm{i}(e+fx)}f x+3\,\mathrm{i}\,e^{\mathrm{i}e+\frac{3\mathrm{i}fx}{2}}f^2x^2\,\text{ExpIntegralEi}\left[-\frac{1}{2}\mathrm{i}\,f x\right]+3\,e^{2\mathrm{i}e+\frac{3\mathrm{i}fx}{2}}f^2x^2\,\text{ExpIntegralEi}\left[\frac{\mathrm{i}\,f x}{2}\right]-9\,e^{\frac{3\mathrm{i}fx}{2}}f^2x^2\,\text{ExpIntegralEi}\left[-\frac{3}{2}\mathrm{i}\,f x\right]-9\,\mathrm{i}\,e^{\frac{3}{2}\mathrm{i}(2e+fx)}f^2x^2\,\text{ExpIntegralEi}\left[\frac{3\,\mathrm{i}\,f x}{2}\right]\right)$$

Problem 163: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 495 leaves, 12 steps):

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

Result (type 4, 1486 leaves):

$$\frac{1}{\sqrt{a^2-b^2}\,f^4\sqrt{(-a^2+b^2)\,(\text{Cos}[2e]+\mathrm{i}\,\text{Sin}[2e])}}\mathrm{i}\left(3\,\mathrm{i}\sqrt{a^2-b^2}\,c^2\,d\,f^3\,x\,\text{Log}\left[1+\frac{b\,(\text{Cos}[2e+fx]+\mathrm{i}\,\text{Sin}[2e+fx])}{\mathrm{i}\,a\,\text{Cos}[e]+\sqrt{(-a^2+b^2)\,(\text{Cos}[e]+\mathrm{i}\,\text{Sin}[e])^2}-a\,\text{Sin}[e]}\right](\text{Cos}[e]+\mathrm{i}\,\text{Sin}[e])+3\,\mathrm{i}\sqrt{a^2-b^2}\,c\,d^2\,f^3\,x^2\,\text{Log}\left[1+\frac{b\,(\text{Cos}[2e+fx]+\mathrm{i}\,\text{Sin}[2e+fx])}{\mathrm{i}\,a\,\text{Cos}[e]+\sqrt{(-a^2+b^2)\,(\text{Cos}[e]+\mathrm{i}\,\text{Sin}[e])^2}-a\,\text{Sin}[e]}\right](\text{Cos}[e]+\mathrm{i}\,\text{Sin}[e])+\mathrm{i}\sqrt{a^2-b^2}\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,(\text{Cos}[2e+fx]+\mathrm{i}\,\text{Sin}[2e+fx])}{\mathrm{i}\,a\,\text{Cos}[e]+\sqrt{(-a^2+b^2)\,(\text{Cos}[e]+\mathrm{i}\,\text{Sin}[e])^2}-a\,\text{Sin}[e]}\right](\text{Cos}[e]+\mathrm{i}\,\text{Sin}[e])+3\sqrt{a^2-b^2}\,d\,f^2\,(c+d\,x)^2\right.$$

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

Problem 168: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 925 leaves, 22 steps):

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

Result (type 4, 7006 leaves):

$$\frac{1}{(a^2-b^2) f^2} 3 a c^2 d \left(\frac{\pi \operatorname{ArcTan}\left[\frac{b+a \operatorname{Tan}\left[\frac{1}{2} (e+f x)\right]}{\sqrt{a^2-b^2}}\right]}{\sqrt{a^2-b^2}}+\right.$$
$$\frac{1}{\sqrt{-a^2+b^2}} \left(2 \left(-e+\frac{\pi}{2}-f x\right) \operatorname{ArcTanh}\left[\frac{(a+b) \operatorname{Cot}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.$$
$$2 \left(-e+\operatorname{ArcCos}\left[-\frac{a}{b}\right]\right) \operatorname{ArcTanh}\left[\frac{(-a+b) \operatorname{Tan}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$
$$\left(\operatorname{ArcCos}\left[-\frac{a}{b}\right]-2 i \left(\operatorname{ArcTanh}\left[\frac{(a+b) \operatorname{Cot}\left[\frac{1}{2} \left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

$$\text{ArcTanh}\Big[\frac{(-a+b)\,\text{Tan}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]\Big)\Big)\,\text{Log}\Big[\frac{\sqrt{-a^2+b^2}\,e^{-\frac{1}{2}i\left(-e+\frac{\pi}{2}-f x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\Big]+$$

$$\Big(\text{ArcCos}\Big[-\frac{a}{b}\Big]+2\,i\,\Big(\text{ArcTanh}\Big[\frac{(a+b)\,\text{Cot}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]-\text{ArcTanh}\Big[$$

$$\frac{(-a+b)\,\text{Tan}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]\Big)\Big)\,\text{Log}\Big[\frac{\sqrt{-a^2+b^2}\,e^{\frac{1}{2}i\left(-e+\frac{\pi}{2}-f x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\Big]-$$

$$\Big(\text{ArcCos}\Big[-\frac{a}{b}\Big]+2\,i\,\text{ArcTanh}\Big[\frac{(-a+b)\,\text{Tan}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]\Big)$$

$$\text{Log}\Big[1-\Big(\Big(a-i\sqrt{-a^2+b^2}\Big)\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big]+$$

$$\Big(-\text{ArcCos}\Big[-\frac{a}{b}\Big]+2\,i\,\text{ArcTanh}\Big[\frac{(-a+b)\,\text{Tan}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]\Big)$$

$$\text{Log}\Big[1-\Big(\Big(a+i\sqrt{-a^2+b^2}\Big)\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big]+$$

$$i\,\Big(\text{PolyLog}\Big[2,\Big(\Big(a-i\sqrt{-a^2+b^2}\Big)\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big]-$$

$$\text{PolyLog}\Big[2,\Big(\Big(a+i\sqrt{-a^2+b^2}\Big)\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\Big(-e+\frac{\pi}{2}-f x\Big)\Big]\Big)\Big)\Big]\Big)\Big)+$$

$$\frac{1}{\left(a^2-b^2\right)f^3}\,6\,a\,c\,d^2\,\text{Cot}[e]\left(\frac{\pi\,\text{ArcTan}\Big[\frac{b+a\,\text{Tan}\left[\frac{1}{2}(e+f x)\right]}{\sqrt{a^2-b^2}}\Big]}{\sqrt{a^2-b^2}}+\frac{1}{\sqrt{-a^2+b^2}}\right.$$

$$\Big(2\Big(-e+\frac{\pi}{2}-f x\Big)\,\text{ArcTanh}\Big[\frac{(a+b)\,\text{Cot}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]-$$

$$2\Big(-e+\text{ArcCos}\Big[-\frac{a}{b}\Big]\Big)\,\text{ArcTanh}\Big[\frac{(-a+b)\,\text{Tan}\big[\frac{1}{2}\big(-e+\frac{\pi}{2}-f x\big)\big]}{\sqrt{-a^2+b^2}}\Big]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

$$\left.\left.\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\;e^{-\frac{1}{2}i\left(-e+\frac{\pi}{2}-f x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{2}i\left(-e+\frac{\pi}{2}-f x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[e+f x]}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-f x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\left(a^2-b^2\right)\sqrt{\left(-a^2+b^2\right)\,e^{2\,\mathbb{i}\,e}}\;f^3\right)+$$

$$\Bigg(3\;a\;d^3\;e^{\mathbb{i}\,e}\;\text{Cot}[e]$$

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

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

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

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

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

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

$$\left(\left(a^2-b^2\right)\sqrt{\left(-a^2+b^2\right)\,e^{2\,\mathbb{i}\,e}}\;f^4\right)+$$

$$\frac{1}{2\left(a^2-b^2\right)\sqrt{\left(-a^2+b^2\right)\,e^{2\,\mathbb{i}\,e}}\;f^4}\;d^3\;e^{-\mathbb{i}\,e}\;\text{Csc}[e]$$

$$\Bigg(2\,e^{2 i e}\sqrt{\left(-a^2+b^2\right) e^{2 i e}}\;f^3 x^3 -$$

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

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

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

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

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

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

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

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

$$6\left(\sqrt{\left(-a^2+b^2\right) e^{2 i e}}\left(-1+e^{2 i e}\right)+i\,a\,e^{i e}\left(1+e^{2 i e}\right)\right)$$

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

$$6\left(\sqrt{\left(-a^2+b^2\right) e^{2 i e}}\left(-1+e^{2 i e}\right)-i\,a\,e^{i e}\left(1+e^{2 i e}\right)\right) f\,x$$

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

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

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

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

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

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

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

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

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

$$\frac{1}{\left(a^2-b^2\right)\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,e}}\,f^4}$$

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

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

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

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

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

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

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

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

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

$$\frac{6\,\mathbb{i}\,a\,c^2\,d\,\text{ArcTan}\left[\frac{\mathbb{i}\,b\,\text{Cos}[e]-\mathbb{i}\,(-a+b\,\text{Sin}[e])\,\text{Tan}\left[\frac{f x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[e]^2+b^2\,\text{Sin}[e]^2}}\right]\,\text{Cot}[e]}{\left(a^2-b^2\right)\,f^2\,\sqrt{-a^2+b^2\,\text{Cos}[e]^2+b^2\,\text{Sin}[e]^2}}+$$

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

$$6$$

$$b$$

$$c$$

$$d^2$$

$$\text{Csc}[e]$$

$$\left(-\frac{x^2\,\text{Cos}[e]}{2\,b}+\frac{1}{b\,f}\right.$$

$$x\,\left(f\,x\,\text{Cos}[e]-\left(2\,a\,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{f x}{2}\right]\,(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e])\,\left(b\,\text{Cos}\left[e+\frac{f x}{2}\right]+a\,\text{Sin}\left[\frac{f x}{2}\right]\right)\right)\right/\right.\right.$$

$$\left.\left.\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e])^2}\right)\right]\,\text{Cos}[e]\,(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e])\right)\right/$$

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

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

$$\left(2\,\left(e-\text{ArcCos}\left[-\frac{a}{b}\right]\right)\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{-a^2+b^2}}\right]+\right.$$

$$(-2\,e+\pi-2\,f\,x)\,\text{ArcTanh}\left[\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]}{\sqrt{-a^2+b^2}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,\mathbb{i}\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

$$\left.\left(b\,\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}\,(2\,e+\pi+2\,f\,x)\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathbb{i}\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}\,(2\,e-\pi+2\,f\,x)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\ \text{Cot}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]\right)\right)\Big]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathbb{i}\left(-\text{ArcTanh}\left[\frac{(a-b)\ \text{Tan}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]}{\sqrt{-a^2+b^2}}\right]+\text{ArcTanh}\Big[\right.\right.$$

$$\left.\left.\frac{(a+b)\ \text{Tan}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]}{\sqrt{-a^2+b^2}}\Big]\right)\right)\ \text{Log}\left[\frac{\sqrt{-a^2+b^2}\ e^{\frac{1}{4}\mathbb{i}\,(-2e+\pi-2fx)}}{\sqrt{2}\ \sqrt{b}\ \sqrt{a+b\,\text{Sin}[e+fx]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathbb{i}\ \text{ArcTanh}\left[\frac{(a-b)\ \text{Tan}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]}{\sqrt{-a^2+b^2}}\right]-2\,\mathbb{i}\ \text{ArcTanh}\Big[\right.$$

$$\left.\frac{(a+b)\ \text{Tan}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]}{\sqrt{-a^2+b^2}}\Big]\right)\ \text{Log}\left[\frac{\sqrt{-a^2+b^2}\ e^{\frac{1}{4}\mathbb{i}\,(2e-\pi+2fx)}}{\sqrt{2}\ \sqrt{b}\ \sqrt{a+b\,\text{Sin}[e+fx]}}\right]+$$

$$\mathbb{i}\left(\text{PolyLog}\Big[2,\ \left(\left(a-\mathbb{i}\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\ \text{Tan}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]\right)\right)\Big/\right.$$

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\ \text{Cot}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]\right)\right)\Big]-\text{PolyLog}\Big[2,$$

$$\left(\left(a+\mathbb{i}\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\ \text{Tan}\left[\frac{1}{4}\left(2e-\pi+2fx\right)\right]\right)\right)\Big/$$

$$\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\ \text{Cot}\left[\frac{1}{4}\left(2e+\pi+2fx\right)\right]\right)\right)\Big]\right)\Bigg)+$$

$$\left(2\,a\,x\ \text{ArcTan}\left[\left(\text{Sec}\left[\frac{fx}{2}\right]\left(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e]\right)\left(b\,\text{Cos}\left[e+\frac{fx}{2}\right]+a\,\text{Sin}\left[\frac{fx}{2}\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{a^2-b^2}\ \sqrt{\left(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e]\right)^2}\right)\right]\text{Cos}[e]\left(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e]\right)\Big)\Big/$$

$$\left(\sqrt{a^2-b^2}\ \sqrt{\left(\text{Cos}[e]-\mathbb{i}\,\text{Sin}[e]\right)^2}\right)+\frac{(e+fx)\ \text{Log}[a+b\,\text{Sin}[e+fx]]\ \text{Sin}[e]}{f}-$$

$$\frac{1}{f}b\left(\frac{(e+fx)\ \text{Log}[a+b\,\text{Sin}[e+fx]]}{b}-\frac{1}{b}\right.$$

$$\left(-\frac{1}{2}\,\mathbb{i}\left(-e+\frac{\pi}{2}-fx\right)^2+4\,\mathbb{i}\ \text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a-b)\ \text{Tan}\left[\frac{1}{2}\left(-e+\frac{\pi}{2}-fx\right)\right]}{\sqrt{a^2-b^2}}\right]+\right.$$

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

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

$$\left(-e+\frac{\pi}{2}-f x\right) \operatorname{Log}[a+b \operatorname{Sin}[e+f x]]-i\left(\operatorname{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right) e^{i\left(-e+\frac{\pi}{2}-f x\right)}}{b}\right]+\right.$$

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

$$\left(3 b c^2 d \operatorname{Csc}[e]\left(-b f x \operatorname{Cos}[e]+b \operatorname{Log}[a+b \operatorname{Cos}[f x] \operatorname{Sin}[e]+b \operatorname{Cos}[e] \operatorname{Sin}[f x]] \operatorname{Sin}[e]+\right.\right.$$

$$\left.\left.\frac{2 i a b \operatorname{ArcTan}\left[\frac{i b \operatorname{Cos}[e]-i(-a+b \operatorname{Sin}[e]) \operatorname{Tan}\left[\frac{f x}{2}\right]}{\sqrt{-a^2+b^2 \operatorname{Cos}[e]^2+b^2 \operatorname{Sin}[e]^2}}\right] \operatorname{Cos}[e]}{\sqrt{-a^2+b^2 \operatorname{Cos}[e]^2+b^2 \operatorname{Sin}[e]^2}}\right)\right) \Big/$$

$$\left(\left(a^2-b^2\right) f^2\left(b^2 \operatorname{Cos}[e]^2+b^2 \operatorname{Sin}[e]^2\right)\right)+$$

$$\left(\operatorname{Csc}\left[\frac{e}{2}\right] \operatorname{Sec}\left[\frac{e}{2}\right]\left(-a c^3 \operatorname{Cos}[e]-3 a c^2 d x \operatorname{Cos}[e]-3 a c d^2 x^2 \operatorname{Cos}[e]-a d^3 x^3 \operatorname{Cos}[e]-b c^3 \operatorname{Sin}[f x]-3 b c^2 d x \operatorname{Sin}[f x]-3 b c d^2 x^2 \operatorname{Sin}[f x]-b d^3 x^3 \operatorname{Sin}[f x]\right)\right) \Big/$$

$$(2(a-b)(a+b) f(a+b \operatorname{Sin}[e+f x]))$$

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

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

Optimal (type 4, 671 leaves, 18 steps):

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

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

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

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

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

Result (type 4, 8893 leaves):

$$\frac{1}{(a^2-b^2)\,f\,(-1+\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\,2\,i\,(\text{Cos}[e]+i\,\text{Sin}[e])$$

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

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

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

$$2\,\sqrt{a^2-b^2}\,\text{ArcTan}\left[\frac{2\,a\,(\text{Cos}[e+f\,x]+i\,\text{Sin}[e+f\,x])}{b\,(-1+\text{Cos}[2\,e+2\,f\,x]+i\,\text{Sin}[2\,e+2\,f\,x])}\right]-i\,\sqrt{a^2-b^2}\,\text{Log}\Big[4\,a^2\,\text{Cos}[$$

$$\left.2\,e+2\,f\,x]+b^2\,(-1+\text{Cos}[2\,e+2\,f\,x]+i\,\text{Sin}[2\,e+2\,f\,x])^2+4\,i\,a^2\,\text{Sin}[2\,e+2\,f\,x]\Big]\right)$$

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

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

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

$$2\,\text{ArcTan}\Big[\frac{2\,a\,\left(\text{Cos}[e+f\,x]+\mathrm{i}\,\text{Sin}[e+f\,x]\right)}{b\,\left(-1+\text{Cos}[2\,e+2\,f\,x]+\mathrm{i}\,\text{Sin}[2\,e+2\,f\,x]\right)}\Big]-\mathrm{i}\,\text{Log}\Big[4\,a^2\,\text{Cos}[2\,e+2\,f\,x]+$$

$$b^2\,\left(-1+\text{Cos}[2\,e+2\,f\,x]+\mathrm{i}\,\text{Sin}[2\,e+2\,f\,x]\right)^2+4\,\mathrm{i}\,a^2\,\text{Sin}[2\,e+2\,f\,x]\Big]\Bigg)$$

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

$$
\begin{array}{l}
\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big]\Big) \Big/ \\
\left(f\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)+ \\
\operatorname{PolyLog}\Big[2,-\Big(\left(b\left(\operatorname{Cos}[2 e+f x]+\mathrm{i} \operatorname{Sin}[2 e+f x]\right)\right) \Big/ \\
\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big)\Big] \Big/ \\
\left(f^2\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)\Big) \Big/ \\
\Big(-\frac{1}{b} 2 \operatorname{Cos}[2 e] \sqrt{\left(-a^2 \operatorname{Cos}[2 e]+b^2 \operatorname{Cos}[2 e]-\mathrm{i}\, a^2 \operatorname{Sin}[2 e]+\mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}+ \\
\frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2 e] \sqrt{\left(-a^2 \operatorname{Cos}[2 e]+b^2 \operatorname{Cos}[2 e]-\mathrm{i}\, a^2 \operatorname{Sin}[2 e]+\mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}\Big)\Big)+ \\
\Big(x^2 \Big/ \left(2\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)+ \\
\Big(\mathrm{i}\, x \operatorname{Log}\Big[1+\left(b\left(\operatorname{Cos}[2 e+f x]+\mathrm{i} \operatorname{Sin}[2 e+f x]\right)\right) \Big/ \\
\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big]\Big) \Big/ \\
\left(f\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)+ \\
\operatorname{PolyLog}\Big[2,-\Big(\left(b\left(\operatorname{Cos}[2 e+f x]+\mathrm{i} \operatorname{Sin}[2 e+f x]\right)\right) \Big/ \\
\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big)\Big] \Big/ \\
\left(f^2\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)\Big) \Big/ \\
\Big(-\frac{1}{b} 2 \operatorname{Cos}[2 e] \sqrt{\left(-a^2 \operatorname{Cos}[2 e]+b^2 \operatorname{Cos}[2 e]-\mathrm{i}\, a^2 \operatorname{Sin}[2 e]+\mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}+ \\
\frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2 e] \sqrt{\left(-a^2 \operatorname{Cos}[2 e]+b^2 \operatorname{Cos}[2 e]-\mathrm{i}\, a^2 \operatorname{Sin}[2 e]+\mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}\Big)\Big)- \\
2\, \mathrm{i}\, a\, d^2 \Big(\Big(\Big(x^2 \Big/ \left(2\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)+ \\
\Big(\mathrm{i}\, x \operatorname{Log}\Big[1+\left(b\left(\operatorname{Cos}[2 e+f x]+\mathrm{i} \operatorname{Sin}[2 e+f x]\right)\right) \Big/ \\
\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big]\Big) \Big/ \\
\left(f\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)+ \\
\operatorname{PolyLog}\Big[2,-\Big(\left(b\left(\operatorname{Cos}[2 e+f x]+\mathrm{i} \operatorname{Sin}[2 e+f x]\right)\right) \Big/ \\
\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big)\Big] \Big/ \\
\left(f^2\left(\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 e]+\mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)\Big) \\
\Big(-\mathrm{i}\, a \operatorname{Cos}[e]-a \operatorname{Sin}[e]-\left(\operatorname{Cos}[2 e]-\mathrm{i} \operatorname{Sin}[2 e]\right) \\
\sqrt{\left(-a^2 \operatorname{Cos}[2 e]+b^2 \operatorname{Cos}[2 e]-\mathrm{i}\, a^2 \operatorname{Sin}[2 e]+\mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}\Big)\Big) \Big/
\end{array}
$$

$$\left(b\left(-\frac{1}{b}2\,\text{Cos}[2e]\sqrt{\left(-a^2\,\text{Cos}[2e]+b^2\,\text{Cos}[2e]-i\,a^2\,\text{Sin}[2e]+i\,b^2\,\text{Sin}[2e]\right)}+\frac{1}{b}2\,i\,\text{Sin}[2e]\sqrt{\left(-a^2\,\text{Cos}[2e]+b^2\,\text{Cos}[2e]-i\,a^2\,\text{Sin}[2e]+i\,b^2\,\text{Sin}[2e]\right)}\right)\right)-$$

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

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

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

$$\left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big]\Big)\Big/$$

$$\Big(f\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)+$$

$$\text{PolyLog}\Big[2,\ -\Big(\big(b\ (\text{Cos}[2\,e+f\,x]+i\,\text{Sin}[2\,e+f\,x])\big)\Big/$$

$$\left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)\Big]\Big/$$

$$\Big(f^2\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)\Big)$$

$$\Big(-i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+(\text{Cos}[2\,e]-i\,\text{Sin}[2\,e])$$

$$\sqrt{}\,(-a^2\,\text{Cos}[2\,e]+b^2\,\text{Cos}[2\,e]-i\,a^2\,\text{Sin}[2\,e]+i\,b^2\,\text{Sin}[2\,e])\Big)\Big)\Big/$$

$$\Big(b\ \Big(-\frac{1}{b}2\,\text{Cos}[2\,e]\ \sqrt{}\,(-a^2\,\text{Cos}[2\,e]+b^2\,\text{Cos}[2\,e]-i\,a^2\,\text{Sin}[2\,e]+i\,b^2\,\text{Sin}[2\,e])+$$

$$\frac{1}{b}2\,i\,\text{Sin}[2\,e]\ \sqrt{}\,(-a^2\,\text{Cos}[2\,e]+b^2\,\text{Cos}[2\,e]-i\,a^2\,\text{Sin}[2\,e]+i\,b^2\,\text{Sin}[2\,e])\Big)\Big)\Big)-$$

$$a\,d^2\,f\ \Big(\Big(\Big(x^3\Big/\Big(3\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)+$$

$$\Big(i\,x^2\,\text{Log}\Big[1+\big(b\ (\text{Cos}[2\,e+f\,x]+i\,\text{Sin}[2\,e+f\,x])\big)\Big/$$

$$\left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big]\Big)\Big/$$

$$\Big(f\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)+$$

$$\Big(2\,x\,\text{PolyLog}\Big[2,\ -\Big(\big(b\ (\text{Cos}[2\,e+f\,x]+i\,\text{Sin}[2\,e+f\,x])\big)\Big/$$

$$\left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)\Big]\Big)\Big/$$

$$\Big(f^2\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)+$$

$$\Big(2\,i\,\text{PolyLog}\Big[3,\ -\Big(\big(b\ (\text{Cos}[2\,e+f\,x]+i\,\text{Sin}[2\,e+f\,x])\big)\Big/$$

$$\left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)\Big]\Big)\Big/$$

$$\Big(f^3\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]+\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)\Big)$$

$$\Big(-i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-(\text{Cos}[2\,e]-i\,\text{Sin}[2\,e])$$

$$\sqrt{}\,(-a^2\,\text{Cos}[2\,e]+b^2\,\text{Cos}[2\,e]-i\,a^2\,\text{Sin}[2\,e]+i\,b^2\,\text{Sin}[2\,e])\Big)\Big)\Big/$$

$$\Big(b\ \Big(-\frac{1}{b}2\,\text{Cos}[2\,e]\ \sqrt{}\,(-a^2\,\text{Cos}[2\,e]+b^2\,\text{Cos}[2\,e]-i\,a^2\,\text{Sin}[2\,e]+i\,b^2\,\text{Sin}[2\,e])+$$

$$\frac{1}{b}2\,i\,\text{Sin}[2\,e]\ \sqrt{}\,(-a^2\,\text{Cos}[2\,e]+b^2\,\text{Cos}[2\,e]-i\,a^2\,\text{Sin}[2\,e]+i\,b^2\,\text{Sin}[2\,e])\Big)\Big)-$$

$$\Big(\Big(x^3\Big/\Big(3\ \left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big)+$$

$$\Big(i\,x^2\,\text{Log}\Big[1+\big(b\ (\text{Cos}[2\,e+f\,x]+i\,\text{Sin}[2\,e+f\,x])\big)\Big/$$

$$\left(i\,a\,\text{Cos}[e]-a\,\text{Sin}[e]-\sqrt{(-a^2+b^2)\ (\text{Cos}[2\,e]+i\,\text{Sin}[2\,e])}\right)\Big]\Big)\Big/$$

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

$$\text{PolyLog}[2, -((b\,(\text{Cos}[2e+fx] + i\,\text{Sin}[2e+fx]))\,/$$
$$(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])}))]\,/$$
$$(f^2\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})))$$
$$(\text{Cos}[2e] + i\,\text{Sin}[2e])\,(-i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + (\text{Cos}[2e] - i\,\text{Sin}[2e])$$
$$\sqrt{(-a^2\,\text{Cos}[2e] + b^2\,\text{Cos}[2e] - i\,a^2\,\text{Sin}[2e] + i\,b^2\,\text{Sin}[2e])}))\,/$$
$$(b\,(-\frac{1}{b}2\,\text{Cos}[2e]\,\sqrt{(-a^2\,\text{Cos}[2e] + b^2\,\text{Cos}[2e] - i\,a^2\,\text{Sin}[2e] + i\,b^2\,\text{Sin}[2e])} +$$
$$\frac{1}{b}2\,i\,\text{Sin}[2e]\,\sqrt{(-a^2\,\text{Cos}[2e] + b^2\,\text{Cos}[2e] - i\,a^2\,\text{Sin}[2e] + i\,b^2\,\text{Sin}[2e])}))) +$$
$$2\,a\,c\,d\,f\,(((x^2/(2\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})) +$$
$$(i\,x\,\text{Log}[1 + (b\,(\text{Cos}[2e+fx] + i\,\text{Sin}[2e+fx]))\,/$$
$$(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})])\,/$$
$$(f\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})) +$$
$$\text{PolyLog}[2, -((b\,(\text{Cos}[2e+fx] + i\,\text{Sin}[2e+fx]))\,/$$
$$(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])}))]\,/$$
$$(f^2\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})))$$
$$(\text{Cos}[2e] + i\,\text{Sin}[2e])\,(-i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - (\text{Cos}[2e] - i\,\text{Sin}[2e])$$
$$\sqrt{(-a^2\,\text{Cos}[2e] + b^2\,\text{Cos}[2e] - i\,a^2\,\text{Sin}[2e] + i\,b^2\,\text{Sin}[2e])}))\,/$$
$$(b\,(-\frac{1}{b}2\,\text{Cos}[2e]\,\sqrt{(-a^2\,\text{Cos}[2e] + b^2\,\text{Cos}[2e] - i\,a^2\,\text{Sin}[2e] + i\,b^2\,\text{Sin}[2e])} +$$
$$\frac{1}{b}2\,i\,\text{Sin}[2e]\,\sqrt{(-a^2\,\text{Cos}[2e] + b^2\,\text{Cos}[2e] - i\,a^2\,\text{Sin}[2e] + i\,b^2\,\text{Sin}[2e])})) -$$
$$((x^2/(2\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})) +$$
$$(i\,x\,\text{Log}[1 + (b\,(\text{Cos}[2e+fx] + i\,\text{Sin}[2e+fx]))\,/$$
$$(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})])\,/$$
$$(f\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})) +$$
$$\text{PolyLog}[2, -((b\,(\text{Cos}[2e+fx] + i\,\text{Sin}[2e+fx]))\,/$$
$$(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])}))]\,/$$
$$(f^2\,(i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] - \sqrt{(-a^2+b^2)\,(\text{Cos}[2e] + i\,\text{Sin}[2e])})))$$
$$(\text{Cos}[2e] + i\,\text{Sin}[2e])\,(-i\,a\,\text{Cos}[e] - a\,\text{Sin}[e] + (\text{Cos}[2e] - i\,\text{Sin}[2e])$$

$$\sqrt{\left(-a^2 \text{Cos}[2 e]+b^2 \text{Cos}[2 e]-i a^2 \text{Sin}[2 e]+i b^2 \text{Sin}[2 e]\right)}\Big)\Big)\Big/$$

$$\left(b\left(-\frac{1}{b}2 \text{Cos}[2 e] \sqrt{\left(-a^2 \text{Cos}[2 e]+b^2 \text{Cos}[2 e]-i a^2 \text{Sin}[2 e]+i b^2 \text{Sin}[2 e]\right)}+\frac{1}{b}2 i \text{Sin}[2 e] \sqrt{\left(-a^2 \text{Cos}[2 e]+b^2 \text{Cos}[2 e]-i a^2 \text{Sin}[2 e]+i b^2 \text{Sin}[2 e]\right)}\right)\right)\Big)\Big)+$$

$$a d^2 f \Bigg(\Bigg(\Bigg(x^3\Big/\left(3\left(i a \text{Cos}[e]-a \text{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)+$$

$$\left(i x^2 \text{Log}\left[1+\left(b\left(\text{Cos}[2 e+f x]+i \text{Sin}[2 e+f x]\right)\right)\Big/\left(i a \text{Cos}[e]-a \text{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right]\right)\Big/$$

$$\left(f\left(i a \text{Cos}[e]-a \text{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)+$$

$$\left(2 x \text{PolyLog}\left[2,-\left(\left(b\left(\text{Cos}[2 e+f x]+i \text{Sin}[2 e+f x]\right)\right)\Big/\left(i a \text{Cos}[e]-a \text{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)\right]\right)\Big/$$

$$\left(f^2\left(i a \text{Cos}[e]-a \text{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)+$$

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

$$\left(f^3\left(i a \text{Cos}[e]-a \text{Sin}[e]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)\Bigg)$$

$$\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)\left(-i a \text{Cos}[e]-a \text{Sin}[e]-\left(\text{Cos}[2 e]-i \text{Sin}[2 e]\right)\sqrt{\left(-a^2 \text{Cos}[2 e]+b^2 \text{Cos}[2 e]-i a^2 \text{Sin}[2 e]+i b^2 \text{Sin}[2 e]\right)}\right)\Bigg)\Big/$$

$$\left(b\left(-\frac{1}{b}2 \text{Cos}[2 e] \sqrt{\left(-a^2 \text{Cos}[2 e]+b^2 \text{Cos}[2 e]-i a^2 \text{Sin}[2 e]+i b^2 \text{Sin}[2 e]\right)}+\frac{1}{b}2 i \text{Sin}[2 e] \sqrt{\left(-a^2 \text{Cos}[2 e]+b^2 \text{Cos}[2 e]-i a^2 \text{Sin}[2 e]+i b^2 \text{Sin}[2 e]\right)}\right)\right)-$$

$$\Bigg(\Bigg(x^3\Big/\left(3\left(i a \text{Cos}[e]-a \text{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)+$$

$$\left(i x^2 \text{Log}\left[1+\left(b\left(\text{Cos}[2 e+f x]+i \text{Sin}[2 e+f x]\right)\right)\Big/\left(i a \text{Cos}[e]-a \text{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right]\right)\Big/$$

$$\left(f\left(i a \text{Cos}[e]-a \text{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)+$$

$$\left(2 x \text{PolyLog}\left[2,-\left(\left(b\left(\text{Cos}[2 e+f x]+i \text{Sin}[2 e+f x]\right)\right)\Big/\left(i a \text{Cos}[e]-a \text{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)\right]\right)\Big/$$

$$\left(f^2\left(i a \text{Cos}[e]-a \text{Sin}[e]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2 e]+i \text{Sin}[2 e]\right)}\right)\right)+$$

$$\left(2 i \text{PolyLog}\left[3,-\left(\left(b\left(\text{Cos}[2 e+f x]+i \text{Sin}[2 e+f x]\right)\right)\Big/\right.\right.\right.$$

$$\left(\mathrm{i}\, a \operatorname{Cos}[e] - a \operatorname{Sin}[e] - \sqrt{\left(-a^2+b^2\right) \left(\operatorname{Cos}[2 e] + \mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\Big)\Big]\Big) \Big/$$

$$\left(f^3 \left(\mathrm{i}\, a \operatorname{Cos}[e] - a \operatorname{Sin}[e] - \sqrt{\left(-a^2+b^2\right) \left(\operatorname{Cos}[2 e] + \mathrm{i} \operatorname{Sin}[2 e]\right)}\right)\right)\Big)$$

$$\left(\operatorname{Cos}[2 e] + \mathrm{i} \operatorname{Sin}[2 e]\right) \Big(-\mathrm{i}\, a \operatorname{Cos}[e] - a \operatorname{Sin}[e] + \big(\operatorname{Cos}[2 e] - \mathrm{i} \operatorname{Sin}[2 e]\big)$$

$$\sqrt{\left(-a^2 \operatorname{Cos}[2 e] + b^2 \operatorname{Cos}[2 e] - \mathrm{i}\, a^2 \operatorname{Sin}[2 e] + \mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}\Big)\Big) \Big/$$

$$\Big(b \Big(-\frac{1}{b} 2 \operatorname{Cos}[2 e] \sqrt{\left(-a^2 \operatorname{Cos}[2 e] + b^2 \operatorname{Cos}[2 e] - \mathrm{i}\, a^2 \operatorname{Sin}[2 e] + \mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)} +$$

$$\frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2 e] \sqrt{\left(-a^2 \operatorname{Cos}[2 e] + b^2 \operatorname{Cos}[2 e] - \mathrm{i}\, a^2 \operatorname{Sin}[2 e] + \mathrm{i}\, b^2 \operatorname{Sin}[2 e]\right)}\Big)\Big)\Big)\Bigg) +$$

$$\Big(\operatorname{Csc}\left[\frac{e}{2}\right] \operatorname{Sec}\left[\frac{e}{2}\right] \big(-a\, c^2 \operatorname{Cos}[e] - 2\, a\, c\, d\, x \operatorname{Cos}[e] -$$

$$a\, d^2\, x^2 \operatorname{Cos}[e] - b\, c^2 \operatorname{Sin}[f x] -$$

$$2\, b\, c\, d\, x \operatorname{Sin}[f x] - b\, d^2\, x^2 \operatorname{Sin}[f x]\big)\Big) \Big/ \Big(2 \left(a - b\right) \left(a + b\right) f \left(a + b \operatorname{Sin}[e + f x]\right)\Big)$$

Problem 175: Result more than twice size of optimal antiderivative.

$$\int (c + d x)^m \left(a + b \operatorname{Sin}[e + f x]\right)^2 \, dx$$

Optimal (type 4, 318 leaves, 10 steps):

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

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

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

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

Result (type 4, 707 leaves):

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

Problem 181: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 76 leaves, 5 steps):

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

Result (type 3, 199 leaves):

$$\left(2\,d\,f\,x\,\text{Cos}\left[c+\frac{d\,x}{2}\right]+\text{Cos}\left[\frac{d\,x}{2}\right]\left(d^2\,x\,(2\,e+f\,x)-4\,f\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\right)-4\,d\,e\,\text{Sin}\left[\frac{d\,x}{2}\right]-2\,d\,f\,x\,\text{Sin}\left[\frac{d\,x}{2}\right]+2\,d^2\,e\,x\,\text{Sin}\left[c+\frac{d\,x}{2}\right]+d^2\,f\,x^2\,\text{Sin}\left[c+\frac{d\,x}{2}\right]-4\,f\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right]\text{Sin}\left[c+\frac{d\,x}{2}\right]\right)\Big/\left(2\,a\,d^2\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)$$

Problem 182: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 28 leaves, 2 steps):

$$\frac{x}{a}+\frac{\text{Cos}[c+d\,x]}{d\,(a+a\,\text{Sin}[c+d\,x])}$$

Result (type 3, 72 leaves):

$$\left(\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\left((c+d\,x)\,\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+(-2+c+d\,x)\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\right)\Big/\left(a\,d\,(1+\text{Sin}[c+d\,x])\right)$$

Problem 185: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 247 leaves, 14 steps):

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

Result (type 4, 1378 leaves):

$$-\frac{1}{4\,a\,d^4\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)}$$

$$\left(-6\,d^2\,e^2\,f\,\text{Cos}\left[\frac{d\,x}{2}\right]+12\,f^3\,\text{Cos}\left[\frac{d\,x}{2}\right]+4\,d^4\,e^3\,x\,\text{Cos}\left[\frac{d\,x}{2}\right]+12\,i\,d^3\,e^2\,f\,x\,\text{Cos}\left[\frac{d\,x}{2}\right]-\right.$$

$$12 d^2 e f^2 x \operatorname{Cos}\left[\frac{d x}{2}\right]+6 d^4 e^2 f x^2 \operatorname{Cos}\left[\frac{d x}{2}\right]+12 i d^3 e f^2 x^2 \operatorname{Cos}\left[\frac{d x}{2}\right]-$$
$$6 d^2 f^3 x^2 \operatorname{Cos}\left[\frac{d x}{2}\right]+4 d^4 e f^2 x^3 \operatorname{Cos}\left[\frac{d x}{2}\right]+4 i d^3 f^3 x^3 \operatorname{Cos}\left[\frac{d x}{2}\right]+d^4 f^3 x^4 \operatorname{Cos}\left[\frac{d x}{2}\right]+$$
$$2 d^3 e^3 \operatorname{Cos}\left[c+\frac{d x}{2}\right]-12 d e f^2 \operatorname{Cos}\left[c+\frac{d x}{2}\right]+18 d^3 e^2 f x \operatorname{Cos}\left[c+\frac{d x}{2}\right]-$$
$$12 d f^3 x \operatorname{Cos}\left[c+\frac{d x}{2}\right]+18 d^3 e f^2 x^2 \operatorname{Cos}\left[c+\frac{d x}{2}\right]+6 d^3 f^3 x^3 \operatorname{Cos}\left[c+\frac{d x}{2}\right]+$$
$$2 d^3 e^3 \operatorname{Cos}\left[c+\frac{3 d x}{2}\right]-12 d e f^2 \operatorname{Cos}\left[c+\frac{3 d x}{2}\right]+6 d^3 e^2 f x \operatorname{Cos}\left[c+\frac{3 d x}{2}\right]-$$
$$12 d f^3 x \operatorname{Cos}\left[c+\frac{3 d x}{2}\right]+6 d^3 e f^2 x^2 \operatorname{Cos}\left[c+\frac{3 d x}{2}\right]+2 d^3 f^3 x^3 \operatorname{Cos}\left[c+\frac{3 d x}{2}\right]+$$
$$6 d^2 e^2 f \operatorname{Cos}\left[2 c+\frac{3 d x}{2}\right]-12 f^3 \operatorname{Cos}\left[2 c+\frac{3 d x}{2}\right]+12 d^2 e f^2 x \operatorname{Cos}\left[2 c+\frac{3 d x}{2}\right]+$$
$$6 d^2 f^3 x^2 \operatorname{Cos}\left[2 c+\frac{3 d x}{2}\right]-24 d^2 e^2 f \operatorname{Cos}\left[\frac{d x}{2}\right] \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]]-$$
$$48 d^2 e f^2 x \operatorname{Cos}\left[\frac{d x}{2}\right] \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]]-$$
$$24 d^2 f^3 x^2 \operatorname{Cos}\left[\frac{d x}{2}\right] \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]]-10 d^3 e^3 \operatorname{Sin}\left[\frac{d x}{2}\right]+$$
$$12 d e f^2 \operatorname{Sin}\left[\frac{d x}{2}\right]-18 d^3 e^2 f x \operatorname{Sin}\left[\frac{d x}{2}\right]+12 d f^3 x \operatorname{Sin}\left[\frac{d x}{2}\right]-$$
$$18 d^3 e f^2 x^2 \operatorname{Sin}\left[\frac{d x}{2}\right]-6 d^3 f^3 x^3 \operatorname{Sin}\left[\frac{d x}{2}\right]-6 d^2 e^2 f \operatorname{Sin}\left[c+\frac{d x}{2}\right]+$$
$$12 f^3 \operatorname{Sin}\left[c+\frac{d x}{2}\right]+4 d^4 e^3 x \operatorname{Sin}\left[c+\frac{d x}{2}\right]+12 i d^3 e^2 f x \operatorname{Sin}\left[c+\frac{d x}{2}\right]-$$
$$12 d^2 e f^2 x \operatorname{Sin}\left[c+\frac{d x}{2}\right]+6 d^4 e^2 f x^2 \operatorname{Sin}\left[c+\frac{d x}{2}\right]+12 i d^3 e f^2 x^2 \operatorname{Sin}\left[c+\frac{d x}{2}\right]-$$
$$6 d^2 f^3 x^2 \operatorname{Sin}\left[c+\frac{d x}{2}\right]+4 d^4 e f^2 x^3 \operatorname{Sin}\left[c+\frac{d x}{2}\right]+4 i d^3 f^3 x^3 \operatorname{Sin}\left[c+\frac{d x}{2}\right]+$$
$$d^4 f^3 x^4 \operatorname{Sin}\left[c+\frac{d x}{2}\right]-24 d^2 e^2 f \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]] \operatorname{Sin}\left[c+\frac{d x}{2}\right]-$$
$$48 d^2 e f^2 x \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]] \operatorname{Sin}\left[c+\frac{d x}{2}\right]-$$
$$24 d^2 f^3 x^2 \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]] \operatorname{Sin}\left[c+\frac{d x}{2}\right]-$$
$$48 f^3 \operatorname{PolyLog}[3, i \operatorname{Cos}[c+d x]-\operatorname{Sin}[c+d x]] \left(\operatorname{Cos}\left[\frac{d x}{2}\right]+\operatorname{Sin}\left[c+\frac{d x}{2}\right]\right)+$$
$$48 i d f^2 (e+f x) \operatorname{PolyLog}[2, i \operatorname{Cos}[c+d x]-\operatorname{Sin}[c+d x]] \left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)$$
$$\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)-6 d^2 e^2 f \operatorname{Sin}\left[c+\frac{3 d x}{2}\right]+$$
$$12 f^3 \operatorname{Sin}\left[c+\frac{3 d x}{2}\right]-12 d^2 e f^2 x \operatorname{Sin}\left[c+\frac{3 d x}{2}\right]-6 d^2 f^3 x^2 \operatorname{Sin}\left[c+\frac{3 d x}{2}\right]+$$
$$2 d^3 e^3 \operatorname{Sin}\left[2 c+\frac{3 d x}{2}\right]-12 d e f^2 \operatorname{Sin}\left[2 c+\frac{3 d x}{2}\right]+6 d^3 e^2 f x \operatorname{Sin}\left[2 c+\frac{3 d x}{2}\right]-$$

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

Problem 187: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 111 leaves, 8 steps):

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

Result (type 3, 236 leaves):

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

Problem 191: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 382 leaves, 19 steps):

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

Result (type 4, 1264 leaves):

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

Problem 192: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 278 leaves, 17 steps):

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

Result (type 4, 931 leaves) :

$$\frac{1}{16 a d^3 \left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right)}$$
$$\left(8 d^2 e^2 \text{Cos}\left[c+\frac{d x}{2}\right]-16 f^2 \text{Cos}\left[c+\frac{d x}{2}\right]+48 d^2 e f x \text{Cos}\left[c+\frac{d x}{2}\right]+24 d^2 f^2 x^2 \text{Cos}\left[c+\frac{d x}{2}\right]+\right.$$
$$6 d^2 e^2 \text{Cos}\left[c+\frac{3 d x}{2}\right]-15 f^2 \text{Cos}\left[c+\frac{3 d x}{2}\right]+12 d^2 e f x \text{Cos}\left[c+\frac{3 d x}{2}\right]+6 d^2 f^2 x^2 \text{Cos}\left[c+\frac{3 d x}{2}\right]+$$
$$14 d e f \text{Cos}\left[2 c+\frac{3 d x}{2}\right]+14 d f^2 x \text{Cos}\left[2 c+\frac{3 d x}{2}\right]-2 d e f \text{Cos}\left[2 c+\frac{5 d x}{2}\right]-$$
$$2 d f^2 x \text{Cos}\left[2 c+\frac{5 d x}{2}\right]+2 d^2 e^2 \text{Cos}\left[3 c+\frac{5 d x}{2}\right]-f^2 \text{Cos}\left[3 c+\frac{5 d x}{2}\right]+4 d^2 e f x \text{Cos}\left[3 c+\frac{5 d x}{2}\right]+$$
$$2 d^2 f^2 x^2 \text{Cos}\left[3 c+\frac{5 d x}{2}\right]+8 d \text{Cos}\left[\frac{d x}{2}\right] \left(3 d^2 e^2 x+f^2 x \left(-2+2 i d x+d^2 x^2\right)+\right.$$
$$\left.e f \left(-2+4 i d x+3 d^2 x^2\right)-8 f (e+f x) \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]]\right)-$$
$$40 d^2 e^2 \text{Sin}\left[\frac{d x}{2}\right]+16 f^2 \text{Sin}\left[\frac{d x}{2}\right]-48 d^2 e f x \text{Sin}\left[\frac{d x}{2}\right]-24 d^2 f^2 x^2 \text{Sin}\left[\frac{d x}{2}\right]-$$
$$16 d e f \text{Sin}\left[c+\frac{d x}{2}\right]+24 d^3 e^2 x \text{Sin}\left[c+\frac{d x}{2}\right]+32 i d^2 e f x \text{Sin}\left[c+\frac{d x}{2}\right]-$$
$$16 d f^2 x \text{Sin}\left[c+\frac{d x}{2}\right]+24 d^3 e f x^2 \text{Sin}\left[c+\frac{d x}{2}\right]+16 i d^2 f^2 x^2 \text{Sin}\left[c+\frac{d x}{2}\right]+$$
$$8 d^3 f^2 x^3 \text{Sin}\left[c+\frac{d x}{2}\right]-64 d e f \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]] \text{Sin}\left[c+\frac{d x}{2}\right]-$$
$$64 d f^2 x \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]] \text{Sin}\left[c+\frac{d x}{2}\right]+$$
$$64 i f^2 \text{PolyLog}[2, i \text{Cos}[c+d x]-\text{Sin}[c+d x]] \left(\text{Cos}\left[\frac{d x}{2}\right]+\text{Sin}\left[c+\frac{d x}{2}\right]\right)-$$
$$14 d e f \text{Sin}\left[c+\frac{3 d x}{2}\right]-14 d f^2 x \text{Sin}\left[c+\frac{3 d x}{2}\right]+6 d^2 e^2 \text{Sin}\left[2 c+\frac{3 d x}{2}\right]-$$
$$15 f^2 \text{Sin}\left[2 c+\frac{3 d x}{2}\right]+12 d^2 e f x \text{Sin}\left[2 c+\frac{3 d x}{2}\right]+6 d^2 f^2 x^2 \text{Sin}\left[2 c+\frac{3 d x}{2}\right]-$$
$$2 d^2 e^2 \text{Sin}\left[2 c+\frac{5 d x}{2}\right]+f^2 \text{Sin}\left[2 c+\frac{5 d x}{2}\right]-4 d^2 e f x \text{Sin}\left[2 c+\frac{5 d x}{2}\right]-$$
$$\left.2 d^2 f^2 x^2 \text{Sin}\left[2 c+\frac{5 d x}{2}\right]-2 d e f \text{Sin}\left[3 c+\frac{5 d x}{2}\right]-2 d f^2 x \text{Sin}\left[3 c+\frac{5 d x}{2}\right]\right)$$

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

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

Optimal (type 4, 134 leaves, 9 steps):

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

Result (type 4, 300 leaves):

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

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

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

Optimal (type 3, 38 leaves, 3 steps):

$$-\frac{\text{ArcTanh}[\text{Cos}[c+d x]]}{a\,d}+\frac{\text{Cos}[c+d x]}{d\,(a+a\,\text{Sin}[c+d x])}$$

Result (type 3, 113 leaves):

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

Problem 203: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 463 leaves, 24 steps):

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

Result (type 4, 1208 leaves):

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

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

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

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

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

$$\big(d^2\,x^2\,\text{ArcTanh}[\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-i\,d\,x\,\text{PolyLog}[2,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+$$

$$i\,d\,x\,\text{PolyLog}[2,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]+$$

$$\text{PolyLog}[3,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]-\text{PolyLog}[3,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]\big)-$$

$$\frac{1}{a\,d^4}\,f^3\,\big(-2\,d^3\,x^3\,\text{ArcTanh}[\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]+3\,i\,d^2\,x^2\,\text{PolyLog}[2,$$

$$-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]-3\,i\,d^2\,x^2\,\text{PolyLog}[2,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-6\,d\,x$$

$$\text{PolyLog}[3,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+6\,d\,x\,\text{PolyLog}[3,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-$$

$$6\,i\,\text{PolyLog}[4,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+6\,i\,\text{PolyLog}[4,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]\big)+$$

$$\big(3\,e^2\,f\,\text{Csc}[c]\,(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c])\big)\Big/$$

$$\left(a\,d^2\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+\frac{1}{a\,d^4}$$

$$2\,f\,\Big(3\,d^2\,(e+f\,x)^2\,\text{Log}[1-i\,\text{Cos}[c+d\,x]+\text{Sin}[c+d\,x]]-6\,i\,d\,f\,(e+f\,x)$$

$$\text{PolyLog}[2,i\,\text{Cos}[c+d\,x]-\text{Sin}[c+d\,x]]+6\,f^2\,\text{PolyLog}[3,i\,\text{Cos}[c+d\,x]-\text{Sin}[c+d\,x]]+$$

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

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

$$\frac{1}{2\,a\,d}$$

$$\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$

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

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

$$\Bigg(3\,e\,f^2\,\text{Csc}[c]\,\text{Sec}[c]\,\Bigg(d^2\,e^{i\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\,(i\,d\,x\,(-\pi+2\,\text{ArcTan}[\text{Tan}[c]])-$$

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

$$\pi\,\text{Log}[\text{Cos}[d\,x]]+2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+$$

$$i\,\text{PolyLog}\left[2,e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right])\,\text{Tan}[c]\Bigg)\Bigg)\Big/\left(a\,d^3\,\sqrt{\text{Sec}[c]^2\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)$$

Problem 204: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 327 leaves, 20 steps):

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

Result (type 4, 663 leaves):

$$\frac{1}{a d^3}\Big(-2 i d^2 e f x-i d^2 f^2 x^2+2 d^2 e^2 \operatorname{ArcTanh}[\operatorname{Cos}[c+d x]+i \operatorname{Sin}[c+d x]]+4 d^2 e f x \operatorname{ArcTanh}[\operatorname{Cos}[c+d x]+i \operatorname{Sin}[c+d x]]+2 d^2 f^2 x^2 \operatorname{ArcTanh}[\operatorname{Cos}[c+d x]+i \operatorname{Sin}[c+d x]]-2 d^2 e f x \operatorname{Cot}[c]-d^2 f^2 x^2 \operatorname{Cot}[c]+2 d e f \operatorname{Log}[1-\operatorname{Cos}[2(c+d x)]-i \operatorname{Sin}[2(c+d x)]]+2 d f^2 x \operatorname{Log}[1-\operatorname{Cos}[2(c+d x)]-i \operatorname{Sin}[2(c+d x)]]-2 i d f (e+f x) \operatorname{PolyLog}[2,-\operatorname{Cos}[c+d x]-i \operatorname{Sin}[c+d x]]+2 i d f (e+f x) \operatorname{PolyLog}[2, \operatorname{Cos}[c+d x]+i \operatorname{Sin}[c+d x]]-i f^2 \operatorname{PolyLog}[2, \operatorname{Cos}[2(c+d x)]+i \operatorname{Sin}[2(c+d x)]]+2 f^2 \operatorname{PolyLog}[3,-\operatorname{Cos}[c+d x]-i \operatorname{Sin}[c+d x]]-2 f^2 \operatorname{PolyLog}[3, \operatorname{Cos}[c+d x]+i \operatorname{Sin}[c+d x]]\Big)-\frac{1}{a d^3} 2 i f\left(2 i d (e+f x) \operatorname{Log}[1-i \operatorname{Cos}[c+d x]+\operatorname{Sin}[c+d x]]+2 f \operatorname{PolyLog}[2, i \operatorname{Cos}[c+d x]-\operatorname{Sin}[c+d x]]+\frac{d^2 x (2 e+f x)(\operatorname{Cos}[c]+i \operatorname{Sin}[c])}{\operatorname{Cos}[c]+i(1+\operatorname{Sin}[c])}\right)+\frac{\operatorname{Csc}\left[\frac{c}{2}\right] \operatorname{Csc}\left[\frac{c}{2}+\frac{d x}{2}\right]\left(e^2 \operatorname{Sin}\left[\frac{d x}{2}\right]+2 e f x \operatorname{Sin}\left[\frac{d x}{2}\right]+f^2 x^2 \operatorname{Sin}\left[\frac{d x}{2}\right]\right)}{2 a d}+\frac{\operatorname{Sec}\left[\frac{c}{2}\right] \operatorname{Sec}\left[\frac{c}{2}+\frac{d x}{2}\right]\left(e^2 \operatorname{Sin}\left[\frac{d x}{2}\right]+2 e f x \operatorname{Sin}\left[\frac{d x}{2}\right]+f^2 x^2 \operatorname{Sin}\left[\frac{d x}{2}\right]\right)}{2 a d}+\frac{2\left(e^2 \operatorname{Sin}\left[\frac{d x}{2}\right]+2 e f x \operatorname{Sin}\left[\frac{d x}{2}\right]+f^2 x^2 \operatorname{Sin}\left[\frac{d x}{2}\right]\right)}{a d\left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

Problem 205: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 169 leaves, 12 steps):

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

Result (type 4, 396 leaves):

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

Problem 206: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Csc}[c+d x]^2}{a+a\,\text{Sin}[c+d x]}\,dx$$

Optimal (type 3, 51 leaves, 5 steps):

$$\frac{\text{ArcTanh}[\text{Cos}[c+d x]]}{a\,d}-\frac{2\,\text{Cot}[c+d x]}{a\,d}+\frac{\text{Cot}[c+d x]}{d\,(a+a\,\text{Sin}[c+d x])}$$

Result (type 3, 167 leaves):

$$\left(-\text{Cos}\left[\frac{1}{2}(c+d x)\right]^2\left(2+\text{Cot}\left[\frac{1}{2}(c+d x)\right]-2\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right]+2\,\text{Log}\left[\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)+2\left(\left(3+\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)\text{Sin}\left[\frac{1}{2}(c+d x)\right]^2+\text{Csc}[c+d x]\,\text{Sin}\left[\frac{1}{2}(c+d x)\right]^4+\left(1+\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]\right]-\text{Log}\left[\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)\text{Sin}[c+d x]\right)\right)\Big/\left(2\,a\,d\,(1+\text{Sin}[c+d x])\right)$$

Problem 209: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 600 leaves, 40 steps):

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

Result (type 4, 1370 leaves):

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

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

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

$$\left.6\,d\,\left(-1+e^{2\,\mathrm{i}\,c}\right)\,x\,\text{PolyLog}\left[2,\,e^{2\,\mathrm{i}\,(c+d\,x)}\right]+3\,\mathrm{i}\,\left(-1+e^{2\,\mathrm{i}\,c}\right)\,\text{PolyLog}\left[3,\,e^{2\,\mathrm{i}\,(c+d\,x)}\right]\right)-\frac{1}{a\,d^3}9\,e\,f^2$$

$$\left(d^2\,x^2\,\text{ArcTanh}[\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x]]-\mathrm{i}\,d\,x\,\text{PolyLog}[2,\,-\text{Cos}[c+d\,x]-\mathrm{i}\,\text{Sin}[c+d\,x]]+\right.$$

$$\mathrm{i}\,d\,x\,\text{PolyLog}[2,\,\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x]]+$$

$$\left.\text{PolyLog}[3,\,-\text{Cos}[c+d\,x]-\mathrm{i}\,\text{Sin}[c+d\,x]]-\text{PolyLog}[3,\,\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x]]\right)+$$

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

$$-\text{Cos}[c+d\,x]-\mathrm{i}\,\text{Sin}[c+d\,x]]-3\,\mathrm{i}\,d^2\,x^2\,\text{PolyLog}[2,\,\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x]]-6\,d\,x$$

$$\text{PolyLog}[3,\,-\text{Cos}[c+d\,x]-\mathrm{i}\,\text{Sin}[c+d\,x]]+6\,d\,x\,\text{PolyLog}[3,\,\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x]]-$$

$$\left.6\,\mathrm{i}\,\text{PolyLog}[4,\,-\text{Cos}[c+d\,x]-\mathrm{i}\,\text{Sin}[c+d\,x]]+6\,\mathrm{i}\,\text{PolyLog}[4,\,\text{Cos}[c+d\,x]+\mathrm{i}\,\text{Sin}[c+d\,x]]\right)-$$

$$\left(3\,e^2\,f\,\text{Csc}[c]\,\left(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]\right)\right)\Big/$$

$$\left(a\,d^2\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+\frac{1}{a\,d^4}$$

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

$$6\,\mathrm{i}\,d\,f\,(e+f\,x)\,\text{PolyLog}[2,\,\mathrm{i}\,\text{Cos}[c+d\,x]-\text{Sin}[c+d\,x]]-6\,f^2$$

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

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

$$\frac{1}{2\,a\,d^2}$$

$$\text{Csc}[c]\,\text{Csc}[c+d\,x]\,\left(-d\,e^3\,\text{Cos}[c]-3\,d\,e^2\,f\,x\,\text{Cos}[c]-3\,d\,e\,f^2\,x^2\,\text{Cos}[c]-\right.$$

$$d\,f^3\,x^3\,\text{Cos}[c]-3\,e^2\,f\,\text{Sin}[c]-6\,e\,f^2\,x\,\text{Sin}[c]-3\,f^3\,x^2\,\text{Sin}[c]-$$

$$\left.2\,d\,e^3\,\text{Sin}[d\,x]-6\,d\,e^2\,f\,x\,\text{Sin}[d\,x]-6\,d\,e\,f^2\,x^2\,\text{Sin}[d\,x]-2\,d\,f^3\,x^3\,\text{Sin}[d\,x]\right)-$$

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

$$\left(3\,e\,f^2\,\text{Csc}[c]\,\text{Sec}[c]\,\left(d^2\,e^{\mathrm{i}\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\left(\mathrm{i}\,d\,x\,(-\pi+2\,\text{ArcTan}[\text{Tan}[c]])-\right.\right.\right.$$

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

$$\pi\,\text{Log}[\text{Cos}[d\,x]]+2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+$$

$$\left.\left.\left.\mathrm{i}\,\text{PolyLog}\left[2,\,e^{2\,\mathrm{i}\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right]\right)\,\text{Tan}[c]\right)\right)\Big/\left(a\,d^3\,\sqrt{\text{Sec}[c]^2}\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)$$

Problem 210: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 392 leaves, 30 steps):

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

Result (type 4, 1420 leaves):

$$\frac{3 e^2 \text{Log}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right]}{2 a d}+\frac{f^2 \text{Log}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right]}{a d^3}+\frac{1}{a d^2} 3 e f \left((c+d x) \left(\text{Log}\left[1-e^{i (c+d x)}\right]-\text{Log}\left[1+e^{i (c+d x)}\right]\right)-c \text{Log}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right]+i \left(\text{PolyLog}\left[2,-e^{i (c+d x)}\right]-\text{PolyLog}\left[2, e^{i (c+d x)}\right]\right)\right)-\frac{1}{a d^3} 3 f^2 \left(d^2 x^2 \text{ArcTanh}[\text{Cos}[c+d x]+i \text{Sin}[c+d x]]-i d x \text{PolyLog}[2,-\text{Cos}[c+d x]-i \text{Sin}[c+d x]]+i d x \text{PolyLog}[2,\text{Cos}[c+d x]+i \text{Sin}[c+d x]]+\text{PolyLog}[3,-\text{Cos}[c+d x]-i \text{Sin}[c+d x]]-\text{PolyLog}[3,\text{Cos}[c+d x]+i \text{Sin}[c+d x]]\right)-\left(2 e f \text{Csc}[c] \left(-d x \text{Cos}[c]+\text{Log}[\text{Cos}[d x] \text{Sin}[c]+\text{Cos}[c] \text{Sin}[d x]] \text{Sin}[c]\right)\right) \Big/ \left(a d^2 \left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+\frac{1}{a d^3} 2 i f \left(2 i d (e+f x) \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]]+2 f \text{PolyLog}[2, i \text{Cos}[c+d x]-\text{Sin}[c+d x]]+\frac{d^2 x (2 e+f x) (\text{Cos}[c]+i \text{Sin}[c])}{\text{Cos}[c]+i (1+\text{Sin}[c])}\right)+\frac{1}{8 a d^2 \left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)} \text{Csc}[c] \text{Csc}[c+d x]^2 \left(-2 e f \text{Cos}\left[\frac{d x}{2}\right]-2 f^2 x \text{Cos}\left[\frac{d x}{2}\right]-2 e f \text{Cos}\left[\frac{3 d x}{2}\right]-2 f^2 x \text{Cos}\left[\frac{3 d x}{2}\right]-5 d e^2 \text{Cos}\left[c-\frac{d x}{2}\right]-10 d e f x \text{Cos}\left[c-\frac{d x}{2}\right]-5 d f^2 x^2 \text{Cos}\left[c-\frac{d x}{2}\right]+d e^2 \text{Cos}\left[c+\frac{d x}{2}\right]+2 d e f x \text{Cos}\left[c+\frac{d x}{2}\right]+d f^2 x^2 \text{Cos}\left[c+\frac{d x}{2}\right]+2 e f \text{Cos}\left[2 c+\frac{d x}{2}\right]+2 f^2 x \text{Cos}\left[2 c+\frac{d x}{2}\right]-d e^2 \text{Cos}\left[c+\frac{3 d x}{2}\right]-2 d e f x \text{Cos}\left[c+\frac{3 d x}{2}\right]-d f^2 x^2 \text{Cos}\left[c+\frac{3 d x}{2}\right]+2 e f \text{Cos}\left[2 c+\frac{3 d x}{2}\right]+2 f^2 x \text{Cos}\left[2 c+\frac{3 d x}{2}\right]+3 d e^2 \text{Cos}\left[3 c+\frac{3 d x}{2}\right]+6 d e f x \text{Cos}\left[3 c+\frac{3 d x}{2}\right]+3 d f^2 x^2 \text{Cos}\left[3 c+\frac{3 d x}{2}\right]+\right.$$

$$4 d e^2 \text{Cos}\left[c+\frac{5 d x}{2}\right]+8 d e f x \text{Cos}\left[c+\frac{5 d x}{2}\right]+4 d f^2 x^2 \text{Cos}\left[c+\frac{5 d x}{2}\right]-2 d e^2 \text{Cos}\left[3 c+\frac{5 d x}{2}\right]-4 d e f x \text{Cos}\left[3 c+\frac{5 d x}{2}\right]-2 d f^2 x^2 \text{Cos}\left[3 c+\frac{5 d x}{2}\right]-d e^2 \text{Sin}\left[\frac{d x}{2}\right]-2 d e f x \text{Sin}\left[\frac{d x}{2}\right]-d f^2 x^2 \text{Sin}\left[\frac{d x}{2}\right]-d e^2 \text{Sin}\left[\frac{3 d x}{2}\right]-2 d e f x \text{Sin}\left[\frac{3 d x}{2}\right]-d f^2 x^2 \text{Sin}\left[\frac{3 d x}{2}\right]-2 e f \text{Sin}\left[c-\frac{d x}{2}\right]-2 f^2 x \text{Sin}\left[c-\frac{d x}{2}\right]-2 e f \text{Sin}\left[c+\frac{d x}{2}\right]-2 f^2 x \text{Sin}\left[c+\frac{d x}{2}\right]-3 d e^2 \text{Sin}\left[2 c+\frac{d x}{2}\right]-6 d e f x \text{Sin}\left[2 c+\frac{d x}{2}\right]-3 d f^2 x^2 \text{Sin}\left[2 c+\frac{d x}{2}\right]-2 e f \text{Sin}\left[c+\frac{3 d x}{2}\right]-2 f^2 x \text{Sin}\left[c+\frac{3 d x}{2}\right]-d e^2 \text{Sin}\left[2 c+\frac{3 d x}{2}\right]-2 d e f x \text{Sin}\left[2 c+\frac{3 d x}{2}\right]-d f^2 x^2 \text{Sin}\left[2 c+\frac{3 d x}{2}\right]+2 e f \text{Sin}\left[3 c+\frac{3 d x}{2}\right]+2 f^2 x \text{Sin}\left[3 c+\frac{3 d x}{2}\right]+2 d e^2 \text{Sin}\left[2 c+\frac{5 d x}{2}\right]+4 d e f x \text{Sin}\left[2 c+\frac{5 d x}{2}\right]+2 d f^2 x^2 \text{Sin}\left[2 c+\frac{5 d x}{2}\right]\Big)+$$

$$\Bigg(f^2 \text{Csc}[c] \text{Sec}[c] \Bigg(d^2 e^{i \text{ArcTan}[\text{Tan}[c]]} x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\Big(i d x \left(-\pi+2 \text{ArcTan}[\text{Tan}[c]]\right)-\pi \text{Log}\left[1+e^{-2 i d x}\right]-2 \left(d x+\text{ArcTan}[\text{Tan}[c]]\right) \text{Log}\left[1-e^{2 i (d x+\text{ArcTan}[\text{Tan}[c]])}\right]+\pi \text{Log}[\text{Cos}[d x]]+2 \text{ArcTan}[\text{Tan}[c]] \text{Log}[\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]]]+i \text{PolyLog}\left[2, e^{2 i (d x+\text{ArcTan}[\text{Tan}[c]])}\right]\Big) \text{Tan}[c]\Bigg)\Bigg)\Bigg/\left(a d^3 \sqrt{\text{Sec}[c]^2 \left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)$$

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

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

Optimal (type 4, 216 leaves, 19 steps):

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

Result (type 4, 484 leaves):

$$\frac{1}{8\,a\,d^2\,(1+\text{Sin}[c+d\,x])}\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\left(-d\,(e+f\,x)\left(1+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Csc}\left[\frac{1}{2}(c+d\,x)\right]-16\,d\,(e+f\,x)\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]+8\,f\,(c+d\,x)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)+2\,(-f+2\,d\,(e+f\,x))\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)-16\,f\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)-8\,f\,\text{Log}[\text{Sin}[c+d\,x]]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)+12\,d\,e\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)-12\,c\,f\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)+12\,f\left((c+d\,x)\left(\text{Log}\left[1-e^{i\,(c+d\,x)}\right]-\text{Log}\left[1+e^{i\,(c+d\,x)}\right]\right)+i\left(\text{PolyLog}\left[2,-e^{i\,(c+d\,x)}\right]-\text{PolyLog}\left[2,e^{i\,(c+d\,x)}\right]\right)\right)\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)-2\,(f+2\,d\,(e+f\,x))\left(\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]+\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right)\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]+d\,(e+f\,x)\,\text{Sec}\left[\frac{1}{2}(c+d\,x)\right]\left(1+\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]\right)\right)$$

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

$$\int\frac{\text{Csc}[c+d\,x]^3}{a+a\,\text{Sin}[c+d\,x]}\,dx$$

Optimal (type 3, 82 leaves, 6 steps):

$$-\frac{3\,\text{ArcTanh}[\text{Cos}[c+d\,x]]}{2\,a\,d}+\frac{2\,\text{Cot}[c+d\,x]}{a\,d}-\frac{3\,\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{2\,a\,d}+\frac{\text{Cot}[c+d\,x]\,\text{Csc}[c+d\,x]}{d\,(a+a\,\text{Sin}[c+d\,x])}$$

Result (type 3, 253 leaves):

$$-\frac{1}{8\,a\,d\,(1+\text{Sin}[c+d\,x])}\left(2\,\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]^2-4\,\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]^2\left(2+\text{Cot}\left[\frac{1}{2}(c+d\,x)\right]-3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right]+3\,\text{Log}\left[\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\right)+24\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2+12\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right]\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2-12\,\text{Log}\left[\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^2+8\,\text{Csc}[c+d\,x]\,\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]^4+8\,\text{Sin}[c+d\,x]+12\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d\,x)\right]\right]\text{Sin}[c+d\,x]-12\,\text{Log}\left[\text{Sin}\left[\frac{1}{2}(c+d\,x)\right]\right]\text{Sin}[c+d\,x]-2\,\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]-\text{Tan}\left[\frac{1}{2}(c+d\,x)\right]^2\right)$$

Problem 214: Attempted integration timed out after 120 seconds.

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

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

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

Result (type 1, 1 leaves):

???

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

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

Optimal (type 4, 544 leaves, 14 steps):

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

Result (type 4, 1528 leaves):

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

$$\mathrm{i}\sqrt{a^2-b^2}\ d^3 f^3 x^3 \,\mathrm{Log}\Big[1+\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\Big]$$

$$(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+3\sqrt{a^2-b^2}\ d^2 f\,(e+fx)^2$$

$$\mathrm{PolyLog}\Big[2,-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\Big]$$

$$(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])-3\sqrt{a^2-b^2}\ d^2 f\,(e+fx)^2\,\mathrm{PolyLog}\Big[2,$$

$$\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+$$

$$6\,\mathrm{i}\sqrt{a^2-b^2}\ d\,e\,f^2\,\mathrm{PolyLog}\Big[3,-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\Big]$$

$$(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+6\,\mathrm{i}\sqrt{a^2-b^2}\ d\,f^3\,x\,\mathrm{PolyLog}\Big[3,$$

$$-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\Big]\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])-$$

$$6\sqrt{a^2-b^2}\ f^3\,\mathrm{PolyLog}\Big[4,-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\Big]$$

$$(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+$$

$$6\sqrt{a^2-b^2}\ f^3\,\mathrm{PolyLog}\Big[4,\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]$$

$$(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+3\sqrt{a^2-b^2}\ d^3 e^2 f\,x$$

$$\mathrm{Log}\Big[1-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]\,(-\mathrm{i}\,\mathrm{Cos}[c]+\mathrm{Sin}[c])+$$

$$3\sqrt{a^2-b^2}\ d^3 e\,f^2 x^2\,\mathrm{Log}\Big[1-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]$$

$$(-\mathrm{i}\,\mathrm{Cos}[c]+\mathrm{Sin}[c])+\sqrt{a^2-b^2}\ d^3 f^3 x^3$$

$$\mathrm{Log}\Big[1-\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]\,(-\mathrm{i}\,\mathrm{Cos}[c]+\mathrm{Sin}[c])+$$

$$6\sqrt{a^2-b^2}\ d\,e\,f^2\,\mathrm{PolyLog}\Big[3,\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]$$

$$(-\mathrm{i}\,\mathrm{Cos}[c]+\mathrm{Sin}[c])+6\sqrt{a^2-b^2}\ d\,f^3\,x\,\mathrm{PolyLog}\Big[3,$$

$$\frac{b\,(\mathrm{Cos}[2c+dx]+\mathrm{i}\,\mathrm{Sin}[2c+dx])}{-\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]\,(-\mathrm{i}\,\mathrm{Cos}[c]+\mathrm{Sin}[c])-$$

$$2\,\mathrm{i}\,d^3\,e^3\,\mathrm{ArcTan}\left[\frac{b\,\mathrm{Cos}[c+d\,x]+\mathrm{i}\,(a+b\,\mathrm{Sin}[c+d\,x])}{\sqrt{a^2-b^2}}\right]\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[2\,c]+\mathrm{i}\,\mathrm{Sin}[2\,c])}\Bigg)$$

Problem 224: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 643 leaves, 19 steps):

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

Result (type 4, 1590 leaves):

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

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

$$\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)+3\sqrt{a^2-b^2}\ d^2 f\left(e+fx\right)^2$$

$$\text{PolyLog}\left[2,-\frac{b\left(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx]\right)}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]$$

$$\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)-3\sqrt{a^2-b^2}\ d^2 f\left(e+fx\right)^2 \text{PolyLog}\left[2,\right.$$

$$\left.\frac{b\left(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx]\right)}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]}\right]\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)+$$

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

$$\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)+6\,\mathbb{i}\sqrt{a^2-b^2}\ d\,f^3\,x\,\text{PolyLog}\left[3,\right.$$

$$\left.-\frac{b\left(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx]\right)}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)-$$

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

$$\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)+6\sqrt{a^2-b^2}\ f^3 \text{PolyLog}\left[4,\right.$$

$$\left.\frac{b\left(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx]\right)}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]}\right]\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)-$$

$$2\,\mathbb{i}\,d^3 e^3 \text{ArcTan}\left[\frac{b\,\text{Cos}[c+dx]+\mathbb{i}\left(a+b\,\text{Sin}[c+dx]\right)}{\sqrt{a^2-b^2}}\right]\sqrt{-\left(a^2-b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}+$$

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

$$\left.\left(-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\right]\left(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

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

$$\left.\left(-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\right]\left(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

$$\sqrt{a^2-b^2}\ d^3 f^3 x^3 \text{Log}\left[1-\left(b\left(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx]\right)\right)\right/$$

$$\left.\left(-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\right]\left(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

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

$$\left(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

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

$$\left.\left.(-\mathrm{i}\,\mathrm{Cos}[c]+\mathrm{Sin}[c])\right)+12\,b\,f\,\left(-2\,f^2+d^2\,(e+f\,x)^2\right)\,\mathrm{Sin}[c+d\,x]\right)$$

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

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

Optimal (type 4, 802 leaves, 24 steps):

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

Result (type 4, 1851 leaves):

$$\frac{1}{32\,b^3}\left(16\,(2\,a^2+b^2)\,e^3\,x+24\,(2\,a^2+b^2)\,e^2\,f\,x^2+16\,(2\,a^2+b^2)\,e\,f^2\,x^3+\right.$$
$$4\,(2\,a^2+b^2)\,f^3\,x^4-\frac{1}{\sqrt{a^2-b^2}\,d^4\,\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[2\,c]+\mathrm{i}\,\mathrm{Sin}[2\,c])}}\,32\,\mathrm{i}\,a^3$$
$$\left(3\,\mathrm{i}\,\sqrt{a^2-b^2}\,d^3\,e^2\,f\,x\,\mathrm{Log}\left[1+\frac{b\,(\mathrm{Cos}[2\,c+d\,x]+\mathrm{i}\,\mathrm{Sin}[2\,c+d\,x])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\right]\right.$$
$$(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+3\,\mathrm{i}\,\sqrt{a^2-b^2}\,d^3\,e\,f^2\,x^2$$
$$\mathrm{Log}\left[1+\frac{b\,(\mathrm{Cos}[2\,c+d\,x]+\mathrm{i}\,\mathrm{Sin}[2\,c+d\,x])}{\mathrm{i}\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\right]\,(\mathrm{Cos}[c]+\mathrm{i}\,\mathrm{Sin}[c])+$$

$$\mathbb{i}\sqrt{a^2-b^2}\ d^3 f^3 x^3 \text{Log}\Big[1+\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

$$(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])+3\sqrt{a^2-b^2}\ d^2 f\,(e+fx)^2$$

$$\text{PolyLog}\Big[2,-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

$$(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])-3\sqrt{a^2-b^2}\ d^2 f\,(e+fx)^2\,\text{PolyLog}\Big[2,$$

$$\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])+$$

$$6\,\mathbb{i}\sqrt{a^2-b^2}\ d\,e\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

$$(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])+6\,\mathbb{i}\sqrt{a^2-b^2}\ d\,f^3\,x\,\text{PolyLog}\Big[3,$$

$$-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])-$$

$$6\sqrt{a^2-b^2}\ f^3\,\text{PolyLog}\Big[4,-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

$$(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])+6\sqrt{a^2-b^2}\ f^3\,\text{PolyLog}\Big[4,$$

$$\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])+$$

$$3\sqrt{a^2-b^2}\ d^3 e^2 f\,x\,\text{Log}\Big[1-\Big(b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])\Big)\Big/$$

$$\Big(-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]\Big)\Big]\,(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c])+$$

$$3\sqrt{a^2-b^2}\ d^3 e\,f^2 x^2\,\text{Log}\Big[1-\Big(b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])\Big)\Big/$$

$$\Big(-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]\Big)\Big]\,(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c])+$$

$$\sqrt{a^2-b^2}\ d^3 f^3 x^3\,\text{Log}\Big[1-\Big(b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])\Big)\Big/$$

$$\Big(-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]\Big)\Big]\,(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c])+$$

$$6\sqrt{a^2-b^2}\ d\,e\,f^2\,\text{PolyLog}\Big[3,\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

$$(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c])+$$

$$6\sqrt{a^2-b^2}\ d\,f^3\,x\,\text{PolyLog}\Big[3,\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

$$(-\mathbb{i}\,\text{Cos}[c]+\text{Sin}[c])-2\,\mathbb{i}\,d^3 e^3\,\text{ArcTan}\Big[\frac{b\,\text{Cos}[c+dx]+\mathbb{i}\,(a+b\,\text{Sin}[c+dx])}{\sqrt{a^2-b^2}}\Big]$$

$$\left.\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2c]+i\,\text{Sin}[2c]\right)}\right)+$$

$$\frac{1}{d^4}16\,a\,b\left(6\,i\,f^3-6\,d\,f^2\,(e+f\,x)-3\,i\,d^2\,f\,(e+f\,x)^2+d^3\,(e+f\,x)^3\right)$$

$$\left(\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]\right)+\frac{1}{d^4}16$$

$$a$$

$$b$$

$$\left(-6\,i\,f^3-6\,d\,f^2\,(e+f\,x)+3\,i\,d^2\,f\,(e+f\,x)^2+d^3\,(e+f\,x)^3\right)$$

$$\left(\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]\right)+\frac{1}{d^4}$$

$$b^2\left(3\,f^3+6\,i\,d\,f^2\,(e+f\,x)-6\,d^2\,f\,(e+f\,x)^2-4\,i\,d^3\,(e+f\,x)^3\right)$$

$$\left(\text{Cos}[2\,(c+d\,x)]-i\,\text{Sin}[2\,(c+d\,x)]\right)+\frac{1}{d^4}$$

$$b^2\left(3\,f^3-6\,i\,d\,f^2\,(e+f\,x)-6\,d^2\,f\,(e+f\,x)^2+4\,i\,d^3\,(e+f\,x)^3\right)$$

$$\left.\left(\text{Cos}[2\,(c+d\,x)]+i\,\text{Sin}[2\,(c+d\,x)]\right)\right)$$

Problem 232: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 732 leaves, 22 steps):

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

Result (type 4, 2186 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 236: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 882 leaves, 29 steps):

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

Result (type 4, 2452 leaves):

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

$$\left(a\, d^2\, \left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+$$

$$\frac{1}{a^2\,\sqrt{a^2-b^2}\;d^4\,\sqrt{\left(-a^2+b^2\right)\,\left(\text{Cos}[2\,c]+\text{i}\,\text{Sin}[2\,c]\right)}}$$

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

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

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

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

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

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

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

$$\left.\frac{b\,\left(\text{Cos}[2\,c+d\,x]+\text{i}\,\text{Sin}[2\,c+d\,x]\right)}{-\text{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\,\left(\text{Cos}[c]+\text{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]}\right]\,\left(\text{Cos}[c]+\text{i}\,\text{Sin}[c]\right)+$$

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

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

$$\left.-\frac{b\,\left(\text{Cos}[2\,c+d\,x]+\text{i}\,\text{Sin}[2\,c+d\,x]\right)}{\text{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\,\left(\text{Cos}[c]+\text{i}\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]\,\left(\text{Cos}[c]+\text{i}\,\text{Sin}[c]\right)-$$

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

$$\left(\text{Cos}[c]+\text{i}\,\text{Sin}[c]\right)+$$

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

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

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

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

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

$$\text{Log}\left[1-\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\right]\,(-i\,\text{Cos}[c]+\text{Sin}[c])+$$

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

$$(-i\,\text{Cos}[c]+\text{Sin}[c])+6\sqrt{a^2-b^2}\;d\,f^3\,x\,\text{PolyLog}\Big[3,$$

$$\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]\,(-i\,\text{Cos}[c]+\text{Sin}[c])-$$

$$2\,i\,d^3\,e^3\,\text{ArcTan}\left[\frac{b\,\text{Cos}[c+dx]+i\,(a+b\,\text{Sin}[c+dx])}{\sqrt{a^2-b^2}}\right]\sqrt{(-a^2+b^2)\,(\text{Cos}[2c]+i\,\text{Sin}[2c])}\Bigg)+$$

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

$$\frac{1}{2\,a\,d}$$

$$\text{Sec}\left[\frac{c}{2}\right]$$

$$\text{Sec}\left[\frac{c}{2}+\frac{dx}{2}\right]$$

$$\left(e^3\,\text{Sin}\left[\frac{dx}{2}\right]+3\,e^2\,f\,x\,\text{Sin}\left[\frac{dx}{2}\right]+3\,e\,f^2\,x^2\,\text{Sin}\left[\frac{dx}{2}\right]+f^3\,x^3\,\text{Sin}\left[\frac{dx}{2}\right]\right)-$$

$$\Bigg(3\,e\,f^2\,\text{Csc}[c]\,\text{Sec}[c]\,\Bigg(d^2\,e^{i\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\,(i\,d\,x\,(-\pi+2\,\text{ArcTan}[\text{Tan}[c]])-$$

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

$$\pi\,\text{Log}[\text{Cos}[d\,x]]+2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+$$

$$i\,\text{PolyLog}\left[2,e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right])\,\text{Tan}[c]\Bigg)\Bigg)\Bigg/\left(a\,d^3\sqrt{\text{Sec}[c]^2\,(\text{Cos}[c]^2+\text{Sin}[c]^2)}\right)$$

Problem 246: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 1106 leaves, 30 steps):

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

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

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

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

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

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

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

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

Result (type 4, 4475 leaves):

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

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

$$2 \left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right) \text{ArcTanh}\left[\frac{(-a+b) \text{Tan}\left[\frac{1}{2} \left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2 i \left(\text{ArcTanh}\left[\frac{(a+b) \text{Cot}\left[\frac{1}{2} \left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

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

$$\frac{1}{\sqrt{-a^2+b^2}}$$

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{-\frac{1}{2}i\left(-c+\frac{\pi}{2}-d\,x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+d\,x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{\frac{1}{2}i\left(-c+\frac{\pi}{2}-d\,x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+d\,x]}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$
$$\text{Log}\left[1-\left(\left(a-i\sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right]+$$

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$
$$\text{Log}\left[1-\left(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right]+$$

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

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

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

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

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

$$\left(\left(-a^2+b^2\right)d^3\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}\right)+$$

$$\frac{2\,i\,b\,e^2\,\text{ArcTan}\left[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]}{\left(-a^2+b^2\right)d\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}+$$

$$\frac{4\,i\,a^2\,e\,f\,\text{ArcTan}\left[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]\text{Cot}[c]}{b\left(-a^2+b^2\right)d^2\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}+$$

$$\frac{1}{\left(-a^2+b^2\right)d}\;2\;a\;f^2\;\text{Csc}[\;c]$$

$$\left(-\frac{x^2\,\text{Cos}[c]}{2\,b}+\frac{1}{b\,d}\right.$$

$$x\left(d\,x\,\text{Cos}[c]-\left(2\,a\,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{d\,x}{2}\right]\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\left(b\,\text{Cos}\left[c+\frac{d\,x}{2}\right]+a\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)\right)\right/\right.\right.$$

$$\left.\left(\sqrt{a^2-b^2}\sqrt{\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)^2}\right)\right]\text{Cos}[c]\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\Bigg)\Bigg/$$

$$\left(\sqrt{a^2-b^2}\sqrt{\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)^2}\right)-\text{Log}[a+b\,\text{Sin}[c+d\,x]]\,\text{Sin}[c]\Bigg)+$$

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

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

$$(-2c+\pi-2dx)\,\text{ArcTanh}\left[\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\left((a+b)\left(-a+b-i\sqrt{-a^2+b^2}\right)\left(1+i\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\left((a+b)\left(i\,a-i\,b+\sqrt{-a^2+b^2}\right)\left(i+\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(-\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]+\text{ArcTanh}\left[\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{\frac{1}{4}i(-2c+\pi-2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]-2\,i\,\text{ArcTanh}\left[\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{\frac{1}{4}i(2c-\pi+2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\right]+$$

$$i\left(\text{PolyLog}\left[2,\left(\left(a-i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]-\text{PolyLog}\left[2,\left(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]\right)\Bigg)\Bigg)+$$

$$\left(2\,a\,x\,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{dx}{2}\right](\text{Cos}[c]-i\,\text{Sin}[c])\left(b\,\text{Cos}\left[c+\frac{dx}{2}\right]+a\,\text{Sin}\left[\frac{dx}{2}\right]\right)\right)\Big/\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-i\,\text{Sin}[c])^2}\right)\right]\text{Cos}[c]\,(\text{Cos}[c]-i\,\text{Sin}[c])\right)\Big/$$

$$\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-i\,\text{Sin}[c])^2}\right)+\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]\,\text{Sin}[c]}{d}-$$

$$\frac{1}{d}b\left(\frac{(c+d\,x)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]}{b}-\frac{1}{b}\right.$$

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

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

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

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

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

$$\left(2\,a\,e\,f\,\text{Csc}[c]\left(-b\,d\,x\,\text{Cos}[c]+b\,\text{Log}[a+b\,\text{Cos}[d\,x]\,\text{Sin}[c]+b\,\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]+\right.\right.$$

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

$$\left(\left(-a^2+b^2\right)\,d^2\,\left(b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2\right)\right)+$$

$$\left(\text{Csc}\left[\frac{c}{2}\right]\text{Sec}\left[\frac{c}{2}\right]\right.$$

$$\left(a^2 e^2 \text{Cos}[c] + 2 a^2 e f x \text{Cos}[c] + a^2 f^2 x^2 \text{Cos}[c] + a b e^2 \text{Sin}[d x] + 2 a b e f x \text{Sin}[d x] + a b f^2 x^2 \text{Sin}[d x]\right)\right) \Big/ \left(2 (a-b) b (a+b) d (a + b \text{Sin}[c + d x])\right)\right)$$

Problem 247: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 1512 leaves, 36 steps):

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

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

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

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

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

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

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

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

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

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

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

Result (type 4, 7026 leaves):

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

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

$$\frac{1}{b\left(-a^2+b^2\right)d^3}\,6\,a^2\,e\,f^2\,\mathrm{Cot}[c]\left(\frac{\pi\,\mathrm{ArcTan}\left[\frac{b+a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2-b^2}}\right]}{\sqrt{a^2-b^2}}+\right.$$

$$\frac{1}{\sqrt{-a^2+b^2}}$$

$$\left(2\left(-c+\frac{\pi}{2}-d\,x\right)\mathrm{ArcTanh}\left[\frac{(a+b)\,\mathrm{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.$$

$$2\left(-c+\mathrm{ArcCos}\left[-\frac{a}{b}\right]\right)\mathrm{ArcTanh}\left[\frac{(-a+b)\,\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\mathrm{ArcTanh}\left[\frac{(a+b)\,\mathrm{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

$$\left.\left.\mathrm{ArcTanh}\left[\frac{(-a+b)\,\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\mathrm{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{-\frac{1}{2}i\left(-c+\frac{\pi}{2}-d\,x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\mathrm{Sin}[c+d\,x]}}\right]+$$

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\mathrm{ArcTanh}\left[\frac{(a+b)\,\mathrm{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\mathrm{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\mathrm{ArcTanh}\left[\frac{(-a+b)\,\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\mathrm{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\mathrm{ArcTanh}\left[\frac{(-a+b)\,\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\ \mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right]\right)\Bigg)\Bigg) +$$

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

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

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

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

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

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

$$\left(\left(-a^2+b^2\right)\,d^3\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\right)+$$

$$\Bigg(3$$

$$a^2$$
$$e^{i\,c}$$
$$f^3$$
$$\mathrm{Cot}[$$
$$c]$$

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

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

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

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

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

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

$$\left(b\,\left(-a^2+b^2\right)\,d^4\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\right)+$$

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

$$a\;e^{-i\,c}\;f^3\;\text{Csc}[c]$$

$$\Bigg(2\,d^3\,e^{2\,i\,c}\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\;x^3-$$

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

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

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

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

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

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

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

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

$$6\,d\,\left(\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\;\left(-1+e^{2\,i\,c}\right)+i\,a\,e^{i\,c}\,\left(1+e^{2\,i\,c}\right)\right)$$

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

$$6\,d\,\left(\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\;\left(-1+e^{2\,i\,c}\right)-i\,a\,e^{i\,c}\,\left(1+e^{2\,i\,c}\right)\right)\,x$$

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

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

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

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

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

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

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

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

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

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

$$b\;e^{i\,c}\;f^3$$

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

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

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

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

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

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

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

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

$$\frac{2\,i\,b\,e^3\,\text{ArcTan}\Big[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\Big]}{\left(-a^2+b^2\right)d\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}+$$

$$\frac{6\,i\,a^2\,e^2\,f\,\text{ArcTan}\Big[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\Big]\,\text{Cot}[c]}{b\left(-a^2+b^2\right)d^2\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}+$$

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

$$6\ a\ e\ f^2\ \text{Csc}[c]$$

$$\Bigg(-\frac{x^2\,\text{Cos}[c]}{2\,b}+\frac{1}{b\,d}$$

$$x\Bigg(d\,x\,\text{Cos}[c]-\Bigg(2\,a\,\text{ArcTan}\Big[\Big(\text{Sec}\Big[\frac{d x}{2}\Big]\,(\text{Cos}[c]-i\,\text{Sin}[c])\,\Big(b\,\text{Cos}\Big[c+\frac{d x}{2}\Big]+a\,\text{Sin}\Big[\frac{d x}{2}\Big]\Big)\Big)\Big/$$

$$\Big(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-i\,\text{Sin}[c])^2}\Big)\Big]\,\text{Cos}[c]\,(\text{Cos}[c]-i\,\text{Sin}[c])\Bigg)\Big/$$

$$\Big(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-i\,\text{Sin}[c])^2}\Big)-\text{Log}[a+b\,\text{Sin}[c+d x]]\,\text{Sin}[c]\Bigg)+$$

$$\frac{1}{b\,d}\Bigg(-\frac{1}{d}\,a\,\text{Cos}[c]\Bigg(\frac{\pi\,\text{ArcTan}\Big[\frac{b+a\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}{\sqrt{a^2-b^2}}\Big]}{\sqrt{a^2-b^2}}+\frac{1}{\sqrt{-a^2+b^2}}$$

$$\Bigg(2\left(c-\text{ArcCos}\Big[-\frac{a}{b}\Big]\right)\text{ArcTanh}\Big[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2 d x)\right]}{\sqrt{-a^2+b^2}}\Big]+$$

$$(-2c+\pi-2 d x)\,\text{ArcTanh}\Big[\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2 d x)\right]}{\sqrt{-a^2+b^2}}\Big]-$$

$$\Bigg(\text{ArcCos}\Big[-\frac{a}{b}\Big]-2\,i\,\text{ArcTanh}\Big[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2 d x)\right]}{\sqrt{-a^2+b^2}}\Big]\Bigg)$$

$$\text{Log}\Big[\Big((a+b)\left(-a+b-i\sqrt{-a^2+b^2}\right)\left(1+i\,\text{Cot}\Big[\frac{1}{4}(2c+\pi+2dx)\Big]\right)\Big)\Big/$$

$$\Big(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\Big[\frac{1}{4}(2c+\pi+2dx)\Big]\right)\Big)\Big]-$$

$$\left(\text{ArcCos}\Big[-\frac{a}{b}\Big]+2\,i\,\text{ArcTanh}\Big[\frac{(a-b)\,\text{Tan}\big[\frac{1}{4}(2c-\pi+2dx)\big]}{\sqrt{-a^2+b^2}}\Big]\right)$$

$$\text{Log}\Big[\Big((a+b)\left(i\,a-i\,b+\sqrt{-a^2+b^2}\right)\left(i+\text{Cot}\Big[\frac{1}{4}(2c+\pi+2dx)\Big]\right)\Big)\Big/$$

$$\Big(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\Big[\frac{1}{4}(2c+\pi+2dx)\Big]\right)\Big)\Big]+$$

$$\left(\text{ArcCos}\Big[-\frac{a}{b}\Big]+2\,i\left(-\text{ArcTanh}\Big[\frac{(a-b)\,\text{Tan}\big[\frac{1}{4}(2c-\pi+2dx)\big]}{\sqrt{-a^2+b^2}}\Big]+\text{ArcTanh}\Big[\right.\right.$$

$$\left.\left.\frac{(a+b)\,\text{Tan}\big[\frac{1}{4}(2c+\pi+2dx)\big]}{\sqrt{-a^2+b^2}}\Big]\right)\right)\text{Log}\Big[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{4}i(-2c+\pi-2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\Big]+$$

$$\left(\text{ArcCos}\Big[-\frac{a}{b}\Big]+2\,i\,\text{ArcTanh}\Big[\frac{(a-b)\,\text{Tan}\big[\frac{1}{4}(2c-\pi+2dx)\big]}{\sqrt{-a^2+b^2}}\Big]-2\,i\,\text{ArcTanh}\Big[\right.$$

$$\left.\frac{(a+b)\,\text{Tan}\big[\frac{1}{4}(2c+\pi+2dx)\big]}{\sqrt{-a^2+b^2}}\Big]\right)\text{Log}\Big[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{4}i(2c-\pi+2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\Big]+$$

$$i\left(\text{PolyLog}\Big[2,\Big(\left(a-i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{4}(2c-\pi+2dx)\Big]\right)\Big)\Big/\right.$$

$$\Big(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\Big[\frac{1}{4}(2c+\pi+2dx)\Big]\right)\Big)\Big]-\text{PolyLog}\Big[2,$$

$$\Big(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{4}(2c-\pi+2dx)\Big]\right)\Big)\Big/$$

$$\left.\Big(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\Big[\frac{1}{4}(2c+\pi+2dx)\Big]\right)\Big)\Big]\right)\Bigg)\Bigg)+$$

$$\left(2\,a\,x\,\text{ArcTan}\Big[\left(\text{Sec}\Big[\frac{dx}{2}\Big]\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\left(b\,\text{Cos}\Big[c+\frac{dx}{2}\Big]+a\,\text{Sin}\Big[\frac{dx}{2}\Big]\right)\right)\Big/\right.$$

$$\left.\left(\sqrt{a^2-b^2}\,\sqrt{\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)^2}\right)\Big]\,\text{Cos}[c]\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\right)\Big/$$

$$\left(\sqrt{a^2-b^2}\,\sqrt{\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)^2}\right)+\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]\,\text{Sin}[c]}{d}-$$

$$\frac{1}{d}b\left(\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]}{b}-\frac{1}{b}\right.$$

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

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

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

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

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

$$\left(3\,a\,e^2\,f\,\text{Csc}[c]\,\left(-b\,d\,x\,\text{Cos}[c]+b\,\text{Log}[a+b\,\text{Cos}[d\,x]\,\text{Sin}[c]+b\,\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]+\right.\right.$$

$$\left.\left.\frac{2\,i\,a\,b\,\text{ArcTan}\left[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]\,\text{Cos}[c]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right)\right)\Big/$$

$$\left(\left(-a^2+b^2\right)\,d^2\,\left(b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2\right)\right)+$$

$$\Big(\text{Csc}[c]$$

$$\left(-a^2\,e^3\,\text{Cos}[c]-3\,a^2\,e^2\,f\,x\,\text{Cos}[c]-3\,a^2\,e\,f^2\,x^2\,\text{Cos}[c]-\right.$$

$$a^2\,f^3\,x^3\,\text{Cos}[c]-a\,b\,e^3\,\text{Sin}[d\,x]-3\,a\,b\,e^2\,f\,x\,\text{Sin}[d\,x]-$$

$$\left.\left.3\,a\,b\,e\,f^2\,x^2\,\text{Sin}[d\,x]-a\,b\,f^3\,x^3\,\text{Sin}[d\,x]\right)\right)\Big/$$

$$\left(b\,\left(-a^2+b^2\right)\,d\,(a+b\,\text{Sin}[c+d\,x])\right)$$

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

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

Optimal (type 4, 1584 leaves, 73 steps):

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

$$\frac{2 f (e+f x) \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^2}+\frac{3 i a^3 (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{5/2} d}-$$

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

$$\frac{2 f (e+f x) \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^2}-\frac{3 i a^3 (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{5/2} d}+$$

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

$$\frac{2 i f^2 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^3}+\frac{3 a^3 f (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^2}-$$

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

$$\frac{2 i f^2 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^3}-\frac{3 a^3 f (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^2}+$$

$$\frac{3 a f (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^2}+\frac{3 i a^3 f^2 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^3}-$$

$$\frac{3 i a f^2 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^3}-\frac{3 i a^3 f^2 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^3}+\frac{3 i a f^2 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^3}-$$

$$\frac{a (e+f x)^2 \operatorname{Cos}[c+d x]}{2 (a^2-b^2) d (a+b \operatorname{Sin}[c+d x])^2}-\frac{a f (e+f x)}{b (a^2-b^2) d^2 (a+b \operatorname{Sin}[c+d x])}-$$

$$\frac{3 a^2 (e+f x)^2 \operatorname{Cos}[c+d x]}{2 (a^2-b^2)^2 d (a+b \operatorname{Sin}[c+d x])}+\frac{(e+f x)^2 \operatorname{Cos}[c+d x]}{(a^2-b^2) d (a+b \operatorname{Sin}[c+d x])}$$

Result (type 4, 7742 leaves) :

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

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right) \text{ArcTanh}\left[\frac{(-a+b) \text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2 i\left(\text{ArcTanh}\left[\frac{(a+b) \text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2 i\left(\text{ArcTanh}\left[\frac{(a+b) \text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2 i \text{ArcTanh}\left[\frac{(-a+b) \text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2 i \text{ArcTanh}\left[\frac{(-a+b) \text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$i\left(\text{PolyLog}\left[2,\left(\left(a-i \sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2} \text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]\right)\right)\right/\right.$$

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

$$\text{PolyLog}\left[2,\left(\left(a+i \sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2} \text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]\right)\right)\right/$$

$$\left.\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\ \mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right]\right)\right)\Bigg) -$$

$$\frac{1}{b\left(-a^2+b^2\right)^2 d^3}\ a^3 f^2\ \mathrm{Cot}[c]\left(\frac{\pi\ \mathrm{ArcTan}\left[\frac{b+a\ \mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2-b^2}}\right]}{\sqrt{a^2-b^2}}+\right.$$

$$\frac{1}{\sqrt{-a^2+b^2}}$$

$$\left(2\left(-c+\frac{\pi}{2}-d\,x\right)\mathrm{ArcTanh}\left[\frac{(a+b)\ \mathrm{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.$$

$$2\left(-c+\mathrm{ArcCos}\left[-\frac{a}{b}\right]\right)\mathrm{ArcTanh}\left[\frac{(-a+b)\ \mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]-2\,\mathrm{i}\left(\mathrm{ArcTanh}\left[\frac{(a+b)\ \mathrm{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

$$\left.\left.\mathrm{ArcTanh}\left[\frac{(-a+b)\ \mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\mathrm{Log}\left[\frac{\sqrt{-a^2+b^2}\ e^{-\frac{1}{2}\mathrm{i}\left(-c+\frac{\pi}{2}-d\,x\right)}}{\sqrt{2}\ \sqrt{b}\ \sqrt{a+b\,\mathrm{Sin}[c+d\,x]}}\right]+$$

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathrm{i}\left(\mathrm{ArcTanh}\left[\frac{(a+b)\ \mathrm{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\mathrm{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathrm{i}\ \mathrm{ArcTanh}\left[\frac{(-a+b)\ \mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\mathrm{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathrm{i}\ \mathrm{ArcTanh}\left[\frac{(-a+b)\ \mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

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

$$\frac{1}{\sqrt{-a^2+b^2}}$$

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,\mathrm{i}\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right] -\right.\right.$$

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

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

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\mathrm{i}\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[1-\left(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right]+$$

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

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

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

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

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

$$\left(2\left(-a^2+b^2\right)^2d^3\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}\right)-$$

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

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

$$\frac{2\,\mathrm{i}\,a\,b\,f^2\,\mathrm{ArcTan}\left[\frac{\mathrm{i}\,b\,\mathrm{Cos}[c]-\mathrm{i}\,(-a+b\,\mathrm{Sin}[c])\,\mathrm{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\mathrm{Cos}[c]^2+b^2\,\mathrm{Sin}[c]^2}}\right]}{\left(-a^2+b^2\right)^2 d^3\sqrt{-a^2+b^2\,\mathrm{Cos}[c]^2+b^2\,\mathrm{Sin}[c]^2}}-$$

$$\frac{2\,\mathrm{i}\,a^3\,e\,f\,\mathrm{ArcTan}\left[\frac{\mathrm{i}\,b\,\mathrm{Cos}[c]-\mathrm{i}\,(-a+b\,\mathrm{Sin}[c])\,\mathrm{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\mathrm{Cos}[c]^2+b^2\,\mathrm{Sin}[c]^2}}\right]\mathrm{Cot}[c]}{b\left(-a^2+b^2\right)^2 d^2\sqrt{-a^2+b^2\,\mathrm{Cos}[c]^2+b^2\,\mathrm{Sin}[c]^2}}-$$

$$\frac{4\,\mathrm{i}\,a\,b\,e\,f\,\mathrm{ArcTan}\left[\frac{\mathrm{i}\,b\,\mathrm{Cos}[c]-\mathrm{i}\,(-a+b\,\mathrm{Sin}[c])\,\mathrm{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\mathrm{Cos}[c]^2+b^2\,\mathrm{Sin}[c]^2}}\right]\mathrm{Cot}[c]}{\left(-a^2+b^2\right)^2 d^2\sqrt{-a^2+b^2\,\mathrm{Cos}[c]^2+b^2\,\mathrm{Sin}[c]^2}}-$$

$$\frac{1}{\left(-a^2+b^2\right)^2 d}\,a^2\,f^2\,\mathrm{Csc}[c]\left(-\frac{x^2\,\mathrm{Cos}[c]}{2\,b}+\frac{1}{b\,d}\right.$$

$$x\left(d\,x\,\mathrm{Cos}[c]-\left(2\,a\,\mathrm{ArcTan}\left[\left(\mathrm{Sec}\left[\frac{d\,x}{2}\right]\left(\mathrm{Cos}[c]-\mathrm{i}\,\mathrm{Sin}[c]\right)\left(b\,\mathrm{Cos}\left[c+\frac{d\,x}{2}\right]+a\,\mathrm{Sin}\left[\frac{d\,x}{2}\right]\right)\right)\right/\right.\right.$$

$$\left.\left(\sqrt{a^2-b^2}\sqrt{\left(\mathrm{Cos}[c]-\mathrm{i}\,\mathrm{Sin}[c]\right)^2}\right)\right]\mathrm{Cos}[c]\left(\mathrm{Cos}[c]-\mathrm{i}\,\mathrm{Sin}[c]\right)\Big)\Big/$$

$$\left.\left(\sqrt{a^2-b^2}\sqrt{\left(\mathrm{Cos}[c]-\mathrm{i}\,\mathrm{Sin}[c]\right)^2}\right)-\mathrm{Log}[a+b\,\mathrm{Sin}[c+d\,x]]\,\mathrm{Sin}[c]\right)+$$

$$\frac{1}{b\,d}\left(-\frac{1}{d}\,a\,\mathrm{Cos}[c]\left(\frac{\pi\,\mathrm{ArcTan}\left[\frac{b+a\,\mathrm{Tan}\left[\frac{1}{2}(c+d\,x)\right]}{\sqrt{a^2-b^2}}\right]}{\sqrt{a^2-b^2}}+\frac{1}{\sqrt{-a^2+b^2}}\right.\right.$$

$$\left(2\left(c-\mathrm{ArcCos}\left[-\frac{a}{b}\right]\right)\mathrm{ArcTanh}\left[\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{4}\,(2\,c-\pi+2\,d\,x)\right]}{\sqrt{-a^2+b^2}}\right]+\right.$$

$$(-2\,c+\pi-2\,d\,x)\,\mathrm{ArcTanh}\left[\frac{(a+b)\,\mathrm{Tan}\left[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\right]}{\sqrt{-a^2+b^2}}\right]-$$

$$\left(\mathrm{ArcCos}\left[-\frac{a}{b}\right]-2\,\mathrm{i}\,\mathrm{ArcTanh}\left[\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{4}\,(2\,c-\pi+2\,d\,x)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\;\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\text{i}\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}\left(2c-\pi+2dx\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\Big[\left((a+b)\left(\text{i}\,a-\text{i}\,b+\sqrt{-a^2+b^2}\right)\left(\text{i}+\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big/$$

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\;\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\text{i}\left(-\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}\left(2c-\pi+2dx\right)\right]}{\sqrt{-a^2+b^2}}\right]+\text{ArcTanh}\Big[\right.\right.$$

$$\left.\left.\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]}{\sqrt{-a^2+b^2}}\Big]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{4}\text{i}\,(-2c+\pi-2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,\text{i}\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}\left(2c-\pi+2dx\right)\right]}{\sqrt{-a^2+b^2}}\right]-2\,\text{i}\,\text{ArcTanh}\Big[\right.$$

$$\left.\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]}{\sqrt{-a^2+b^2}}\Big]\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{4}\text{i}\,(2c-\pi+2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\right]+$$

$$\text{i}\left(\text{PolyLog}\Big[2,\left(\left(a-\text{i}\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\;\text{Tan}\left[\frac{1}{4}\left(2c-\pi+2dx\right)\right]\right)\right)\Big/\right.$$

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\;\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big]-\text{PolyLog}\Big[2,$$

$$\left(\left(a+\text{i}\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\;\text{Tan}\left[\frac{1}{4}\left(2c-\pi+2dx\right)\right]\right)\right)\Big/$$

$$\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\;\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big]\right)\Bigg)\Bigg)+$$

$$\left(2\,a\,x\,\text{ArcTan}\Big[\left(\text{Sec}\left[\frac{dx}{2}\right]\left(\text{Cos}[c]-\text{i}\,\text{Sin}[c]\right)\left(b\,\text{Cos}\left[c+\frac{dx}{2}\right]+a\,\text{Sin}\left[\frac{dx}{2}\right]\right)\right)\Big/\right.$$

$$\left.\left(\sqrt{a^2-b^2}\,\sqrt{\left(\text{Cos}[c]-\text{i}\,\text{Sin}[c]\right)^2}\right)\Big]\,\text{Cos}[c]\left(\text{Cos}[c]-\text{i}\,\text{Sin}[c]\right)\right)\Big/$$

$$\left(\sqrt{a^2-b^2}\,\sqrt{\left(\text{Cos}[c]-\text{i}\,\text{Sin}[c]\right)^2}\right)+\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]\,\text{Sin}[c]}{d}-$$

$$\frac{1}{d}b\left(\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]}{b}-\frac{1}{b}\right.$$

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

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

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

$$\left(-c+\frac{\pi}{2}-d\,x\right)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]-\mathbb{i}\,\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{\mathbb{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+\right.$$

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

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

$$\left(2\,a\,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{d\,x}{2}\right]\,(\text{Cos}[c]-\mathbb{i}\,\text{Sin}[c])\,\left(b\,\text{Cos}\left[c+\frac{d\,x}{2}\right]+a\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-\mathbb{i}\,\text{Sin}[c])^2}\right)\right]\,\text{Cos}[c]\,(\text{Cos}[c]-\mathbb{i}\,\text{Sin}[c])\right)\Big/$$

$$\left.\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-\mathbb{i}\,\text{Sin}[c])^2}\right)-\text{Log}[a+b\,\text{Sin}[c+d\,x]]\,\text{Sin}[c]\right)+$$

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

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

$$(-2c+\pi-2dx)\,\text{ArcTanh}\left[\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\left((a+b)\left(-a+b-i\sqrt{-a^2+b^2}\right)\left(1+i\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\Big/\right.$$

$$\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[\left((a+b)\left(i\,a-i\,b+\sqrt{-a^2+b^2}\right)\left(i+\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\Big/\right.$$

$$\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(-\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]+\text{ArcTanh}\left[\right.\right.\right.$$

$$\left.\left.\left.\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{\frac{1}{4}i(-2c+\pi-2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]-2\,i\,\text{ArcTanh}\left[\right.\right.$$

$$\left.\left.\frac{(a+b)\,\text{Tan}\left[\frac{1}{4}(2c+\pi+2dx)\right]}{\sqrt{-a^2+b^2}}\right]\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\,e^{\frac{1}{4}i(2c-\pi+2dx)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+dx]}}\right]+$$

$$i\left(\text{PolyLog}\left[2,\left(\left(a-i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]-\text{PolyLog}\left[2,\right.$$

$$\left(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{4}(2c-\pi+2dx)\right]\right)\right)\Big/$$

$$\left.\left.\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}(2c+\pi+2dx)\right]\right)\right)\right]\right)\right)+$$

$$\left(2\,a\,x\,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{dx}{2}\right](\text{Cos}[c]-i\,\text{Sin}[c])\left(b\,\text{Cos}\left[c+\frac{dx}{2}\right]+a\,\text{Sin}\left[\frac{dx}{2}\right]\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-i\,\text{Sin}[c])^2}\right)\right]\text{Cos}[c]\,(\text{Cos}[c]-i\,\text{Sin}[c])\right)\Big/$$

$$\left(\sqrt{a^2-b^2}\,\sqrt{(\text{Cos}[c]-i\,\text{Sin}[c])^2}\right)+\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]\,\text{Sin}[c]}{d}-$$

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

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

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

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

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

$$\left(a^2\,e\,f\,\text{Csc}[c]\left(-b\,d\,x\,\text{Cos}[c]+b\,\text{Log}[a+b\,\text{Cos}[d\,x]\,\text{Sin}[c]+b\,\text{Cos}[c]\,\text{Sin}[d\,x]]\right.\right.$$

$$\left.\left.\text{Sin}[c]+\frac{2\,\text{i}\,a\,b\,\text{ArcTan}\left[\frac{\text{i}\,b\,\text{Cos}[c]-\text{i}\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]\text{Cos}[c]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right)\right)\Big/$$

$$\left(\left(-a^2+b^2\right)^2d^2\left(b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2\right)\right)+$$

$$\left(2 b^2 e f \operatorname{Csc}[c] \left(-b d x \operatorname{Cos}[c] + b \operatorname{Log}[a + b \operatorname{Cos}[d x] \operatorname{Sin}[c] + b \operatorname{Cos}[c] \operatorname{Sin}[d x]] \operatorname{Sin}[c] + \frac{2 i a b \operatorname{ArcTan}\left[\frac{i b \operatorname{Cos}[c] - i (-a + b \operatorname{Sin}[c]) \operatorname{Tan}\left[\frac{d x}{2}\right]}{\sqrt{-a^2 + b^2 \operatorname{Cos}[c]^2 + b^2 \operatorname{Sin}[c]^2}}\right] \operatorname{Cos}[c]}{\sqrt{-a^2 + b^2 \operatorname{Cos}[c]^2 + b^2 \operatorname{Sin}[c]^2}}\right)\right) \Big/$$

$$\left(\left(-a^2 + b^2\right)^2 d^2 \left(b^2 \operatorname{Cos}[c]^2 + b^2 \operatorname{Sin}[c]^2\right)\right) -$$

$$\left(\operatorname{Csc}[c] \left(a^2 e^2 \operatorname{Cos}[c] + 2 a^2 e f x \operatorname{Cos}[c] + a^2 f^2 x^2 \operatorname{Cos}[c] + a b e^2 \operatorname{Sin}[d x] + 2 a b e f x \operatorname{Sin}[d x] + a b f^2 x^2 \operatorname{Sin}[d x]\right)\right) \Big/$$

$$\left(2 b \left(-a^2 + b^2\right) d \left(a + b \operatorname{Sin}[c + d x]\right)^2\right) +$$

$$\left(\operatorname{Csc}[c] \left(3 a b^2 d e^2 \operatorname{Cos}[c] + 6 a b^2 d e f x \operatorname{Cos}[c] + 3 a b^2 d f^2 x^2 \operatorname{Cos}[c] - 2 a^3 e f \operatorname{Sin}[c] + 2 a b^2 e f \operatorname{Sin}[c] - 2 a^3 f^2 x \operatorname{Sin}[c] + 2 a b^2 f^2 x \operatorname{Sin}[c] + a^2 b d e^2 \operatorname{Sin}[d x] + 2 b^3 d e^2 \operatorname{Sin}[d x] + 2 a^2 b d e f x \operatorname{Sin}[d x] + 4 b^3 d e f x \operatorname{Sin}[d x] + a^2 b d f^2 x^2 \operatorname{Sin}[d x] + 2 b^3 d f^2 x^2 \operatorname{Sin}[d x]\right)\right) \Big/$$

$$\left(2 b \left(-a^2 + b^2\right)^2 d^2 \left(a + b \operatorname{Sin}[c + d x]\right)\right)$$

Problem 250: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 2348 leaves, 92 steps):

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

$$\frac{9 a^2 f (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^2 d^2}-\frac{3 f (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^2}+$$

$$\frac{3 i a^3 (e+f x)^3 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{5/2} d}-\frac{3 i a (e+f x)^3 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{3/2} d}+$$

$$\frac{3 i a f^2 (e+f x) \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^3}+\frac{9 a^2 f (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^2 d^2}-$$

$$\frac{3 f (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^2}-\frac{3 i a^3 (e+f x)^3 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{5/2} d}+$$

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

$$\frac{9 i a^2 f^2 (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^2 d^3}+\frac{6 i f^2 (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^3}+$$

$$\frac{9 a^3 f (e+f x)^2 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{5/2} d^2}-\frac{9 a f (e+f x)^2 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{3/2} d^2}+$$

$$\frac{3 a f^3 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^4}-\frac{9 i a^2 f^2 (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^2 d^3}+$$

$$\frac{6 i f^2 (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^3}-\frac{9 a^3 f (e+f x)^2 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{5/2} d^2}+$$

$$\frac{9 a f (e+f x)^2 \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{2 b (a^2-b^2)^{3/2} d^2}+\frac{9 a^2 f^3 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^2 d^4}-$$

$$\frac{6 f^3 \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^4} + \frac{9 i a^3 f^2 (e+f x) \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^3} -$$

$$\frac{9 i a f^2 (e+f x) \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^3} + \frac{9 a^2 f^3 \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^2 d^4} -$$

$$\frac{6 f^3 \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2) d^4} - \frac{9 i a^3 f^2 (e+f x) \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^3} +$$

$$\frac{9 i a f^2 (e+f x) \text{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^3} - \frac{9 a^3 f^3 \text{PolyLog}\left[4, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^4} +$$

$$\frac{9 a f^3 \text{PolyLog}\left[4, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^4} + \frac{9 a^3 f^3 \text{PolyLog}\left[4, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{5/2} d^4} - \frac{9 a f^3 \text{PolyLog}\left[4, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{b (a^2-b^2)^{3/2} d^4} -$$

$$\frac{a (e+f x)^3 \text{Cos}[c+d x]}{2 (a^2-b^2) d (a+b \text{Sin}[c+d x])^2} - \frac{3 a f (e+f x)^2}{2 b (a^2-b^2) d^2 (a+b \text{Sin}[c+d x])} -$$

$$\frac{3 a^2 (e+f x)^3 \text{Cos}[c+d x]}{2 (a^2-b^2)^2 d (a+b \text{Sin}[c+d x])} + \frac{(e+f x)^3 \text{Cos}[c+d x]}{(a^2-b^2) d (a+b \text{Sin}[c+d x])}$$

Result (type 4, 14 368 leaves) :

$$-\frac{1}{2 (-a^2+b^2)^2 d^2} 9 a b e^2 f \left(\frac{\pi \text{ArcTan}\left[\frac{b+a \text{Tan}\left[\frac{1}{2} (c+d x)\right]}{\sqrt{a^2-b^2}}\right]}{\sqrt{a^2-b^2}} +\right.$$

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

$$2 \left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right) \text{ArcTanh}\left[\frac{(-a+b) \text{Tan}\left[\frac{1}{2} \left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right] +$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right] - 2 i \left(\text{ArcTanh}\left[\frac{(a+b) \text{Cot}\left[\frac{1}{2} \left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right] - \text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right] + 2 i \left(\text{ArcTanh}\left[\frac{(a+b) \text{Cot}\left[\frac{1}{2} \left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{-a^2+b^2}}\right] - \text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{2}i\left(-c+\frac{\pi}{2}-d\,x\right)}}{\sqrt{2}\sqrt{b}\sqrt{a+b\,\text{Sin}[c+d\,x]}}\right]-$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[1-\left(\left(a-i\sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right]+$$

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\left[1-\left(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\Big/\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]\right)\right)\right]+$$

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

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

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

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

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

$$\Bigg(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\Bigg(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\Big[$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\Big[1-\Big(\Big(a-i\,\sqrt{-a^2+b^2}\Big)\,\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\,\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big]+$$

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

$$\text{Log}\Big[1-\Big(\Big(a+i\,\sqrt{-a^2+b^2}\Big)\,\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\,\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big]+$$

$$i\,\Big(\text{PolyLog}\Big[2,\,\Big(\Big(a-i\,\sqrt{-a^2+b^2}\Big)\,\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\,\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big]-$$

$$\text{PolyLog}\Big[2,\,\Big(\Big(a+i\,\sqrt{-a^2+b^2}\Big)\,\Big(a+b-\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big/$$

$$\Big(b\,\Big(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\Big[\frac{1}{2}\,\Big(-c+\frac{\pi}{2}-d\,x\Big)\Big]\Big)\Big)\Big]\Big)\Bigg)-$$

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

$$\frac{1}{\sqrt{-a^2+b^2}}$$

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

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

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

$$2\left(-c+\text{ArcCos}\left[-\frac{a}{b}\right]\right)\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\right.\right.$$

$$\left.\left.\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)\right)\text{Log}\left[\frac{\sqrt{-a^2+b^2}\;e^{-\frac{1}{2}i\left(-c+\frac{\pi}{2}-d\,x\right)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\text{Sin}[c+d\,x]}}\right]+$$

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\left(\text{ArcTanh}\left[\frac{(a+b)\,\text{Cot}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]-\text{ArcTanh}\left[\right.\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(-\text{ArcCos}\left[-\frac{a}{b}\right]+2\,i\,\text{ArcTanh}\left[\frac{(-a+b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

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

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

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

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

$$\left(9\,a\,b\,e\,e^{i\,c}\,f^2\left(d^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-d^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-2\,i\,d\,x\,\text{PolyLog}\left[2,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+2\,i\,d\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+2\,\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-2\,\text{PolyLog}\left[3,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]\right)\right)\Big/\left(2\,\left(-a^2+b^2\right)^2\,d^3\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\right)-$$

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

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

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

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

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

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

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

$$3\,i\,d^2\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\;x^2$$

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

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

$$6\,d\left(\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\;\left(-1+e^{2\,i\,c}\right)+i\,a\,e^{i\,c}\,\left(1+e^{2\,i\,c}\right)\right)$$

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

$$6\,d\left(\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}\;\left(-1+e^{2\,i\,c}\right)-i\,a\,e^{i\,c}\,\left(1+e^{2\,i\,c}\right)\right)\,x$$

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

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

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

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

$$6\,i\,e^{2\,i\,c}\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}$$

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

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

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

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

$$6\,i\,e^{2ic}\sqrt{\left(-a^2+b^2\right)e^{2ic}}$$

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

$$\frac{1}{2\left(-a^2+b^2\right)^2 d^4\sqrt{\left(-a^2+b^2\right)e^{2ic}}}$$

$$b\;e^{-ic}\;f^3\;\text{Csc}[c]$$

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

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

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

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

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

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

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

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

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

$$6\,d\left(\sqrt{\left(-a^2+b^2\right)e^{2ic}}\left(-1+e^{2ic}\right)+i\,a\,e^{ic}\left(1+e^{2ic}\right)\right)$$

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

$$6\,d\left(\sqrt{\left(-a^2+b^2\right)e^{2ic}}\left(-1+e^{2ic}\right)-i\,a\,e^{ic}\left(1+e^{2ic}\right)\right)x$$

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

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

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

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

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

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

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

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

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

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

3

a

b

e^{ic}

f^3

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{6\,i\,a\,b\,e^2\,f\,\text{ArcTan}\left[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]\,\text{Cot}[c]}{\left(-a^2+b^2\right)^2\,d^2\,\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}-$$

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

3

a^2

e

f^2

Csc[

$$c]\left(-\frac{x^2\,\text{Cos}[c]}{2\,b}+\frac{1}{b\,d}\right.$$

$$x \left(d x \operatorname{Cos}[c] - \left(2 a \operatorname{ArcTan}\left[\left(\operatorname{Sec}\left[\frac{d x}{2}\right] \left(\operatorname{Cos}[c] - \mathrm{i} \operatorname{Sin}[c]\right) \left(b \operatorname{Cos}\left[c + \frac{d x}{2}\right] + a \operatorname{Sin}\left[\frac{d x}{2}\right]\right)\right) \Big/ \left(\sqrt{a^2 - b^2} \sqrt{\left(\operatorname{Cos}[c] - \mathrm{i} \operatorname{Sin}[c]\right)^2}\right)\right] \operatorname{Cos}[c] \left(\operatorname{Cos}[c] - \mathrm{i} \operatorname{Sin}[c]\right)\right) \Big/ \left(\sqrt{a^2 - b^2} \sqrt{\left(\operatorname{Cos}[c] - \mathrm{i} \operatorname{Sin}[c]\right)^2}\right) - \operatorname{Log}[a + b \operatorname{Sin}[c + d x]] \operatorname{Sin}[c]\right) +$$

$$\frac{1}{b d} \left(-\frac{1}{d} a \operatorname{Cos}[c] \left(\frac{\pi \operatorname{ArcTan}\left[\frac{b + a \operatorname{Tan}\left[\frac{1}{2} (c + d x)\right]}{\sqrt{a^2 - b^2}}\right]}{\sqrt{a^2 - b^2}} + \frac{1}{\sqrt{-a^2 + b^2}}\right.\right.$$

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

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

$$\left(\operatorname{ArcCos}\left[-\frac{a}{b}\right] - 2 \mathrm{i} \operatorname{ArcTanh}\left[\frac{(a - b) \operatorname{Tan}\left[\frac{1}{4} (2 c - \pi + 2 d x)\right]}{\sqrt{-a^2 + b^2}}\right]\right)$$

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

$$\left(\operatorname{ArcCos}\left[-\frac{a}{b}\right] + 2 \mathrm{i} \operatorname{ArcTanh}\left[\frac{(a - b) \operatorname{Tan}\left[\frac{1}{4} (2 c - \pi + 2 d x)\right]}{\sqrt{-a^2 + b^2}}\right]\right)$$

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

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

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

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

$$\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big]-\text{PolyLog}\Big[2,$$

$$\left(\left(a+i\sqrt{-a^2+b^2}\right)\left(a+b+\sqrt{-a^2+b^2}\,\text{Tan}\left[\frac{1}{4}\left(2c-\pi+2dx\right)\right]\right)\right)\Big/$$

$$\left.\left(b\left(a+b+\sqrt{-a^2+b^2}\,\text{Cot}\left[\frac{1}{4}\left(2c+\pi+2dx\right)\right]\right)\right)\Big]\right)\Bigg)\Bigg)+$$

$$\left(2\,a\,x\,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{dx}{2}\right]\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\left(b\,\text{Cos}\left[c+\frac{dx}{2}\right]+a\,\text{Sin}\left[\frac{dx}{2}\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{a^2-b^2}\,\sqrt{\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)^2}\right)\right]\text{Cos}[c]\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)\Bigg)\Big/$$

$$\left(\sqrt{a^2-b^2}\,\sqrt{\left(\text{Cos}[c]-i\,\text{Sin}[c]\right)^2}\right)+\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]\,\text{Sin}[c]}{d}-$$

$$\frac{1}{d}b\left(\frac{(c+dx)\,\text{Log}[a+b\,\text{Sin}[c+dx]]}{b}-\frac{1}{b}\right.$$

$$\left(-\frac{1}{2}i\left(-c+\frac{\pi}{2}-dx\right)^2+4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-dx\right)\right]}{\sqrt{a^2-b^2}}\right]+\right.$$

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

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

$$\left(-c+\frac{\pi}{2}-dx\right)\text{Log}[a+b\,\text{Sin}[c+dx]]-i\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-dx\right)}}{b}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,-\frac{\left(a+\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-dx\right)}}{b}\right]\right)\right)\text{Sin}[c]\right)-$$

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

$$\left(2\, a \,\text{ArcTan}\left[\left(\text{Sec}\left[\frac{d\, x}{2}\right] (\text{Cos}[c]-i\, \text{Sin}[c]) \left(b \,\text{Cos}\left[c+\frac{d\, x}{2}\right]+a \,\text{Sin}\left[\frac{d\, x}{2}\right]\right)\right)\Big/\right.\right.$$

$$\left.\left(\sqrt{a^2-b^2} \sqrt{(\text{Cos}[c]-i\, \text{Sin}[c])^2}\right)\right] \text{Cos}[c] \,(\text{Cos}[c]-i\, \text{Sin}[c])\Big)\Big/$$

$$\left.\left(\sqrt{a^2-b^2} \sqrt{(\text{Cos}[c]-i\, \text{Sin}[c])^2}\right)-\text{Log}[a+b \,\text{Sin}[c+d\, x]] \,\text{Sin}[c]\right)+$$

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

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

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]-2\, i\, \text{ArcTanh}\left[\frac{(a-b) \,\text{Tan}\left[\frac{1}{4} (2\, c-\pi+2\, d\, x)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\, i\, \text{ArcTanh}\left[\frac{(a-b) \,\text{Tan}\left[\frac{1}{4} (2\, c-\pi+2\, d\, x)\right]}{\sqrt{-a^2+b^2}}\right]\right)$$

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

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\, i \left(-\text{ArcTanh}\left[\frac{(a-b) \,\text{Tan}\left[\frac{1}{4} (2\, c-\pi+2\, d\, x)\right]}{\sqrt{-a^2+b^2}}\right]+\text{ArcTanh}\Big[\right.\right.$$

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

$$\left(\text{ArcCos}\left[-\frac{a}{b}\right]+2\, i\, \text{ArcTanh}\left[\frac{(a-b) \,\text{Tan}\left[\frac{1}{4} (2\, c-\pi+2\, d\, x)\right]}{\sqrt{-a^2+b^2}}\right]-2\, i\, \text{ArcTanh}\Big[\right.$$

$$\frac{(a+b)\,\mathrm{Tan}\left[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\right]}{\sqrt{-a^2+b^2}}\Bigg]\Bigg)\,\mathrm{Log}\Big[\frac{\sqrt{-a^2+b^2}\;e^{\frac{1}{4}\,i\,(2\,c-\pi+2\,d\,x)}}{\sqrt{2}\,\sqrt{b}\,\sqrt{a+b\,\mathrm{Sin}[c+d\,x]}}\Big]+$$

$$i\,\Bigg(\mathrm{PolyLog}\Big[2,\,\Big(\Big(a-i\,\sqrt{-a^2+b^2}\Big)\,\Big(a+b+\sqrt{-a^2+b^2}\,\mathrm{Tan}\Big[\frac{1}{4}\,(2\,c-\pi+2\,d\,x)\Big]\Big)\Big)\Big/$$

$$\Big(b\,\Big(a+b+\sqrt{-a^2+b^2}\,\mathrm{Cot}\Big[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\Big]\Big)\Big)\Big]-\mathrm{PolyLog}\Big[2,$$

$$\Big(\Big(a+i\,\sqrt{-a^2+b^2}\Big)\,\Big(a+b+\sqrt{-a^2+b^2}\,\mathrm{Tan}\Big[\frac{1}{4}\,(2\,c-\pi+2\,d\,x)\Big]\Big)\Big)\Big/$$

$$\Big(b\,\Big(a+b+\sqrt{-a^2+b^2}\,\mathrm{Cot}\Big[\frac{1}{4}\,(2\,c+\pi+2\,d\,x)\Big]\Big)\Big)\Big]\Bigg)\Bigg)+$$

$$\Big(2\,a\,x\,\mathrm{ArcTan}\Big[\Big(\mathrm{Sec}\Big[\frac{d\,x}{2}\Big]\,(\mathrm{Cos}[c]-i\,\mathrm{Sin}[c])\,\Big(b\,\mathrm{Cos}\Big[c+\frac{d\,x}{2}\Big]+a\,\mathrm{Sin}\Big[\frac{d\,x}{2}\Big]\Big)\Big)\Big/$$

$$\Big(\sqrt{a^2-b^2}\,\sqrt{(\mathrm{Cos}[c]-i\,\mathrm{Sin}[c])^2}\Big)\Big]\,\mathrm{Cos}[c]\,(\mathrm{Cos}[c]-i\,\mathrm{Sin}[c])\Big)\Big/$$

$$\Big(\sqrt{a^2-b^2}\,\sqrt{(\mathrm{Cos}[c]-i\,\mathrm{Sin}[c])^2}\Big)+\frac{(c+d\,x)\,\mathrm{Log}[a+b\,\mathrm{Sin}[c+d\,x]]\,\mathrm{Sin}[c]}{d}-$$

$$\frac{1}{d}b\,\Bigg(\frac{(c+d\,x)\,\mathrm{Log}[a+b\,\mathrm{Sin}[c+d\,x]]}{b}-\frac{1}{b}$$

$$\Bigg(-\frac{1}{2}\,i\,\Big(-c+\frac{\pi}{2}-d\,x\Big)^2+4\,i\,\mathrm{ArcSin}\Big[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\Big]\,\mathrm{ArcTan}\Big[\frac{(a-b)\,\mathrm{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{a^2-b^2}}\Big]+$$

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

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

$$\Big(-c+\frac{\pi}{2}-d\,x\Big)\,\mathrm{Log}[a+b\,\mathrm{Sin}[c+d\,x]]-i\,\Bigg(\mathrm{PolyLog}\Big[2,\,-\frac{\Big(a-\sqrt{a^2-b^2}\Big)\,e^{i\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\Big]+$$

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

$$\Bigg(3\,a^2\,e^2\,f\,\text{Csc}[c]\,\Bigg(-b\,d\,x\,\text{Cos}[c]+b\,\text{Log}[a+b\,\text{Cos}[d\,x]\,\text{Sin}[c]+b\,\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]+$$

$$\frac{2\,i\,a\,b\,\text{ArcTan}\left[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]\text{Cos}[c]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\Bigg)\Bigg)\Bigg/$$

$$\left(2\left(-a^2+b^2\right)^2 d^2\left(b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2\right)\right)+$$

$$\Bigg(3\;b^2\;e^2\;f\;\text{Csc}[c]\;\Bigg(-b\,d\,x\,\text{Cos}[c]+b\,\text{Log}[a+b\,\text{Cos}[d\,x]\,\text{Sin}[c]+b\,\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]+$$

$$\frac{2\,i\,a\,b\,\text{ArcTan}\left[\frac{i\,b\,\text{Cos}[c]-i\,(-a+b\,\text{Sin}[c])\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\right]\text{Cos}[c]}{\sqrt{-a^2+b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2}}\Bigg)\Bigg)\Bigg/$$

$$\left(\left(-a^2+b^2\right)^2 d^2\left(b^2\,\text{Cos}[c]^2+b^2\,\text{Sin}[c]^2\right)\right)-$$

$$\Big(\text{Csc}[c]\,\big(a^2\,e^3\,\text{Cos}[c]+3\,a^2\,e^2\,f\,x\,\text{Cos}[c]+3\,a^2\,e\,f^2\,x^2\,\text{Cos}[c]+a^2\,f^3\,x^3\,\text{Cos}[c]+a\,b\,e^3\,\text{Sin}[d\,x]+3\,a\,b\,e^2\,f\,x\,\text{Sin}[d\,x]+3\,a\,b\,e\,f^2\,x^2\,\text{Sin}[d\,x]+a\,b\,f^3\,x^3\,\text{Sin}[d\,x]\big)\Big)\Big/$$

$$\left(2\,b\left(-a^2+b^2\right)d\left(a+b\,\text{Sin}[c+d\,x]\right)^2\right)+$$

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

$$\text{Csc}[c]\left(3 a b^2 d e^3 \text{Cos}[c]+9 a b^2 d e^2 f x \text{Cos}[c]+9 a b^2 d e f^2 x^2 \text{Cos}[c]+3 a b^2 d f^3 x^3 \text{Cos}[c]-3 a^3 e^2 f \text{Sin}[c]+3 a b^2 e^2 f \text{Sin}[c]-6 a^3 e f^2 x \text{Sin}[c]+6 a b^2 e f^2 x \text{Sin}[c]-3 a^3 f^3 x^2 \text{Sin}[c]+3 a b^2 f^3 x^2 \text{Sin}[c]+a^2 b d e^3 \text{Sin}[d x]+2 b^3 d e^3 \text{Sin}[d x]+3 a^2 b d e^2 f x \text{Sin}[d x]+6 b^3 d e^2 f x \text{Sin}[d x]+3 a^2 b d e f^2 x^2 \text{Sin}[d x]+6 b^3 d e f^2 x^2 \text{Sin}[d x]+a^2 b d f^3 x^3 \text{Sin}[d x]+2 b^3 d f^3 x^3 \text{Sin}[d x]\right)$$

Problem 253: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 79 leaves, 4 steps):

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

Result (type 4, 246 leaves):

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

Problem 269: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 502 leaves, 22 steps):

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

Result (type 4, 1578 leaves):

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

$$\Big(\mathrm{i}\, d^2 e^3 x + 12\, \mathrm{i}\, e f^2 x + \frac{3}{2}\, \mathrm{i}\, d^2 e^2 f x^2 + 6\, \mathrm{i}\, f^3 x^2 + \mathrm{i}\, d^2 e f^2 x^3 + \frac{1}{4}\, \mathrm{i}\, d^2 f^3 x^4 +$$

$$\mathrm{i}\, d e^3 \text{ArcTan}[\text{Cos}[c+d x] + \mathrm{i}\, \text{Sin}[c+d x]] + \frac{12\, \mathrm{i}\, e f^2 \text{ArcTan}[\text{Cos}[c+d x] + \mathrm{i}\, \text{Sin}[c+d x]]}{d} -$$

$$3 d e^2 f x \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]] - \frac{12 f^3 x \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]]}{d} -$$

$$3 d e f^2 x^2 \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]] - d f^3 x^3 \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]] -$$

$$\frac{1}{2} d e^3 \,\text{Log}\big[1 + \text{Cos}\big[2\,(c+d x)\big] + \mathrm{i}\, \text{Sin}\big[2\,(c+d x)\big]\big] -$$

$$\frac{6 e f^2 \,\text{Log}\big[1 + \text{Cos}\big[2\,(c+d x)\big] + \mathrm{i}\, \text{Sin}\big[2\,(c+d x)\big]\big]}{d} -$$

$$\frac{6\, \mathrm{i}\, f^3 \,\text{PolyLog}[4, \mathrm{i}\, \text{Cos}[c+d x] - \text{Sin}[c+d x]]}{d^2} -$$

$$d e^3 \text{ArcTan}[\text{Cos}[c+d x] + \mathrm{i}\, \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) - \frac{1}{d}$$

$$12 e f^2 \text{ArcTan}[\text{Cos}[c+d x] + \mathrm{i}\, \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$3\, \mathrm{i}\, d e^2 f x \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$\frac{1}{d} 12\, \mathrm{i}\, f^3 x \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$3\, \mathrm{i}\, d e f^2 x^2 \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$\mathrm{i}\, d f^3 x^3 \,\text{Log}[1 - \mathrm{i}\, \text{Cos}[c+d x] + \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$\frac{1}{2}\, \mathrm{i}\, d e^3 \,\text{Log}\big[1 + \text{Cos}\big[2\,(c+d x)\big] + \mathrm{i}\, \text{Sin}\big[2\,(c+d x)\big]\big]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$\frac{1}{d} 6\, \mathrm{i}\, e f^2 \,\text{Log}\big[1 + \text{Cos}\big[2\,(c+d x)\big] + \mathrm{i}\, \text{Sin}\big[2\,(c+d x)\big]\big]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) +$$

$$\frac{1}{d^2} 6 f^3 \,\text{PolyLog}[4, \mathrm{i}\, \text{Cos}[c+d x] - \text{Sin}[c+d x]]\, (\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c]) -$$

$$\frac{1}{d} 6 f^2\, (e + f x)\, \text{PolyLog}[3, \mathrm{i}\, \text{Cos}[c+d x] - \text{Sin}[c+d x]]$$

$$(\text{Cos}[c] - \mathrm{i}\, \text{Sin}[c])\, (\text{Cos}[c] + \mathrm{i}\, (1 + \text{Sin}[c])) + \frac{1}{d^2} 3 f\, \big(4 f^2 + d^2\, (e + f x)^2\big)$$

$$\text{PolyLog}[2, \mathrm{i}\, \text{Cos}[c+d x] - \text{Sin}[c+d x]]\, (\mathrm{i}\, \text{Cos}[c] + \text{Sin}[c])\, (\text{Cos}[c] + \mathrm{i}\, (1 + \text{Sin}[c]))\Big) -$$

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

Problem 270: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 278 leaves, 13 steps):

$$-\frac{i\,(e+f x)^2\,\text{ArcTan}\left[e^{i\,(c+d x)}\right]}{a\,d}+\frac{f^2\,\text{ArcTanh}[\text{Sin}[c+d x]]}{a\,d^3}+\frac{f^2\,\text{Log}[\text{Cos}[c+d x]]}{a\,d^3}+$$
$$\frac{i\,f\,(e+f x)\,\text{PolyLog}\left[2,-i\,e^{i\,(c+d x)}\right]}{a\,d^2}-\frac{i\,f\,(e+f x)\,\text{PolyLog}\left[2,i\,e^{i\,(c+d x)}\right]}{a\,d^2}-$$
$$\frac{f^2\,\text{PolyLog}\left[3,-i\,e^{i\,(c+d x)}\right]}{a\,d^3}+\frac{f^2\,\text{PolyLog}\left[3,i\,e^{i\,(c+d x)}\right]}{a\,d^3}-\frac{f\,(e+f x)\,\text{Sec}[c+d x]}{a\,d^2}-$$
$$\frac{(e+f x)^2\,\text{Sec}[c+d x]^2}{2\,a\,d}+\frac{f\,(e+f x)\,\text{Tan}[c+d x]}{a\,d^2}+\frac{(e+f x)^2\,\text{Sec}[c+d x]\,\text{Tan}[c+d x]}{2\,a\,d}$$

Result (type 4, 811 leaves):

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

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

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

Optimal (type 4, 172 leaves, 10 steps):

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

Result (type 4, 655 leaves):

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

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

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

Optimal (type 3, 37 leaves, 4 steps):

$$\frac{\text{ArcTanh}[\text{Sin}[c+d x]]}{2 a d}-\frac{1}{2 d\,(a+a\,\text{Sin}[c+d x])}$$

Result (type 3, 126 leaves) :

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

Problem 275: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 475 leaves, 20 steps) :

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

Result (type 4, 1253 leaves) :

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

$$\frac{1}{2\,a\,d^3\,\left(\text{Cos}[c]+\mathrm{i}\,\left(1+\text{Sin}[c]\right)\right)}f\,\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)$$

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

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

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

$$\left(-d\,e^3\,\text{Cos}\left[\frac{c}{2}\right]-3\,e^2\,f\,\text{Cos}\left[\frac{c}{2}\right]-3\,d\,e^2\,f\,x\,\text{Cos}\left[\frac{c}{2}\right]-6\,e\,f^2\,x\,\text{Cos}\left[\frac{c}{2}\right]-3\,d\,e\,f^2\,x^2\,\text{Cos}\left[\frac{c}{2}\right]-3\,f^3\,x^2\,\text{Cos}\left[\frac{c}{2}\right]-d\,f^3\,x^3\,\text{Cos}\left[\frac{c}{2}\right]+d\,e^3\,\text{Sin}\left[\frac{c}{2}\right]-3\,e^2\,f\,\text{Sin}\left[\frac{c}{2}\right]+3\,d\,e^2\,f\,x\,\text{Sin}\left[\frac{c}{2}\right]-6\,e\,f^2\,x\,\text{Sin}\left[\frac{c}{2}\right]+3\,d\,e\,f^2\,x^2\,\text{Sin}\left[\frac{c}{2}\right]-3\,f^3\,x^2\,\text{Sin}\left[\frac{c}{2}\right]+d\,f^3\,x^3\,\text{Sin}\left[\frac{c}{2}\right]\right)\Big/\left(6\,a\,d^2\,\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\,\left(\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2\right)+$$

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

Problem 278: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Sec}[c+d x]^2}{a+a \text{Sin}[c+d x]} \, dx$$

Optimal (type 3, 42 leaves, 3 steps):

$$-\frac{\text{Sec}[c+d x]}{3 d (a+a \text{Sin}[c+d x])}+\frac{2 \text{Tan}[c+d x]}{3 a d}$$

Result (type 3, 103 leaves):

$$(2 \text{Cos}[c+d x]-4 \text{Cos}[2 (c+d x)]+8 \text{Sin}[c+d x]+\text{Sin}[2 (c+d x)]) \Big/ \left(12 a d \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]-\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right) \left(\text{Cos}\left[\frac{1}{2} (c+d x)\right]+\text{Sin}\left[\frac{1}{2} (c+d x)\right]\right) (1+\text{Sin}[c+d x])\right)$$

Problem 281: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 698 leaves, 32 steps):

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

Result (type 4, 2640 leaves):

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

$$\frac{3}{2} d e^3 \text{Log}\left[1+\text{Cos}\left[2\left(c+d x\right)\right]+i \text{Sin}\left[2\left(c+d x\right)\right]\right]-$$
$$\frac{14 e f^2 \text{Log}\left[1+\text{Cos}\left[2\left(c+d x\right)\right]+i \text{Sin}\left[2\left(c+d x\right)\right]\right]}{d}-$$
$$\frac{18 i f^3 \text{PolyLog}[4, i \text{Cos}[c+d x]-\text{Sin}[c+d x]]}{d^2}-$$
$$3 d e^3 \text{ArcTan}[\text{Cos}[c+d x]+i \text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-\frac{1}{d}$$
$$28 e f^2 \text{ArcTan}[\text{Cos}[c+d x]+i \text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-$$
$$9 i d e^2 f x \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-$$
$$\frac{1}{d} 28 i f^3 x \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-$$
$$9 i d e f^2 x^2 \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-$$
$$3 i d f^3 x^3 \text{Log}[1-i \text{Cos}[c+d x]+\text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-$$
$$\frac{3}{2} i d e^3 \text{Log}\left[1+\text{Cos}\left[2\left(c+d x\right)\right]+i \text{Sin}\left[2\left(c+d x\right)\right]\right] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-\frac{1}{d}$$
$$14 i e f^2 \text{Log}\left[1+\text{Cos}\left[2\left(c+d x\right)\right]+i \text{Sin}\left[2\left(c+d x\right)\right]\right] \left(\text{Cos}[c]-i \text{Sin}[c]\right)+$$
$$\frac{1}{d^2} 18 f^3 \text{PolyLog}[4, i \text{Cos}[c+d x]-\text{Sin}[c+d x]] \left(\text{Cos}[c]-i \text{Sin}[c]\right)-$$
$$\frac{1}{d} 18 f^2 \left(e+f x\right) \text{PolyLog}[3, i \text{Cos}[c+d x]-\text{Sin}[c+d x]]$$
$$\left(\text{Cos}[c]-i \text{Sin}[c]\right) \left(\text{Cos}[c]+i \left(1+\text{Sin}[c]\right)\right)+\frac{1}{d^2} f \left(28 f^2+9 d^2 \left(e+f x\right)^2\right)$$
$$\left.\text{PolyLog}[2, i \text{Cos}[c+d x]-\text{Sin}[c+d x]] \left(i \text{Cos}[c]+\text{Sin}[c]\right) \left(\text{Cos}[c]+i \left(1+\text{Sin}[c]\right)\right)\right)+$$
$$\frac{\frac{3 e^3 x \text{Cos}[c]}{4 a}+\frac{3 i e^3 x \text{Sin}[c]}{4 a}}{1+\text{Cos}[2 c]+i \text{Sin}[2 c]}+\frac{\frac{9 e^2 f x^2 \text{Cos}[c]}{8 a}+\frac{9 i e^2 f x^2 \text{Sin}[c]}{8 a}}{1+\text{Cos}[2 c]+i \text{Sin}[2 c]}+$$
$$\frac{\frac{3 e f^2 x^3 \text{Cos}[c]}{4 a}+\frac{3 i e f^2 x^3 \text{Sin}[c]}{4 a}}{1+\text{Cos}[2 c]+i \text{Sin}[2 c]}+$$
$$\frac{\frac{3 f^3 x^4 \text{Cos}[c]}{16 a}+\frac{3 i f^3 x^4 \text{Sin}[c]}{16 a}}{1+\text{Cos}[2 c]+i \text{Sin}[2 c]}+$$
$$\frac{e^3+3 e^2 f x+3 e f^2 x^2+f^3 x^3}{8 a d \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2}-$$
$$\frac{3 \left(e^2 f \text{Sin}\left[\frac{d x}{2}\right]+2 e f^2 x \text{Sin}\left[\frac{d x}{2}\right]+f^3 x^2 \text{Sin}\left[\frac{d x}{2}\right]\right)}{4 a d^2 \left(\text{Cos}\left[\frac{c}{2}\right]-\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]-\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}+$$
$$\frac{-e^3-3 e^2 f x-3 e f^2 x^2-f^3 x^3}{8 a d \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^4}+$$
$$\frac{e^2 f \text{Sin}\left[\frac{d x}{2}\right]+2 e f^2 x \text{Sin}\left[\frac{d x}{2}\right]+f^3 x^2 \text{Sin}\left[\frac{d x}{2}\right]}{4 a d^2 \left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right) \left(\text{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^3}+$$

$$\frac{1}{8\,a\,d^3\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)^2}$$
$$\left(-2\,d^2\,e^3\,\text{Cos}\left[\frac{c}{2}\right]-d\,e^2\,f\,\text{Cos}\left[\frac{c}{2}\right]-2\,e\,f^2\,\text{Cos}\left[\frac{c}{2}\right]-6\,d^2\,e^2\,f\,x\,\text{Cos}\left[\frac{c}{2}\right]-2\,d\,e\,f^2\,x\,\text{Cos}\left[\frac{c}{2}\right]-\right.$$
$$2\,f^3\,x\,\text{Cos}\left[\frac{c}{2}\right]-6\,d^2\,e\,f^2\,x^2\,\text{Cos}\left[\frac{c}{2}\right]-d\,f^3\,x^2\,\text{Cos}\left[\frac{c}{2}\right]-2\,d^2\,f^3\,x^3\,\text{Cos}\left[\frac{c}{2}\right]-$$
$$2\,d^2\,e^3\,\text{Sin}\left[\frac{c}{2}\right]+d\,e^2\,f\,\text{Sin}\left[\frac{c}{2}\right]-2\,e\,f^2\,\text{Sin}\left[\frac{c}{2}\right]-6\,d^2\,e^2\,f\,x\,\text{Sin}\left[\frac{c}{2}\right]+2\,d\,e\,f^2\,x\,\text{Sin}\left[\frac{c}{2}\right]-$$
$$\left.2\,f^3\,x\,\text{Sin}\left[\frac{c}{2}\right]-6\,d^2\,e\,f^2\,x^2\,\text{Sin}\left[\frac{c}{2}\right]+d\,f^3\,x^2\,\text{Sin}\left[\frac{c}{2}\right]-2\,d^2\,f^3\,x^3\,\text{Sin}\left[\frac{c}{2}\right]\right)+$$
$$\left(7\,d^2\,e^2\,f\,\text{Sin}\left[\frac{d\,x}{2}\right]+2\,f^3\,\text{Sin}\left[\frac{d\,x}{2}\right]+14\,d^2\,e\,f^2\,x\,\text{Sin}\left[\frac{d\,x}{2}\right]+7\,d^2\,f^3\,x^2\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)\Big/$$
$$\left(4\,a\,d^4\left(\text{Cos}\left[\frac{c}{2}\right]+\text{Sin}\left[\frac{c}{2}\right]\right)\left(\text{Cos}\left[\frac{c}{2}+\frac{d\,x}{2}\right]+\text{Sin}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\right)\right)$$

Problem 282: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 431 leaves, 17 steps):

$$-\frac{3\,i\,(e+f\,x)^2\,\text{ArcTan}\left[e^{i\,(c+d\,x)}\right]}{4\,a\,d}+\frac{5\,f^2\,\text{ArcTanh}[\text{Sin}[c+d\,x]]}{6\,a\,d^3}+\frac{f^2\,\text{Log}[\text{Cos}[c+d\,x]]}{3\,a\,d^3}+$$
$$\frac{3\,i\,f\,(e+f\,x)\,\text{PolyLog}\left[2,-i\,e^{i\,(c+d\,x)}\right]}{4\,a\,d^2}-\frac{3\,i\,f\,(e+f\,x)\,\text{PolyLog}\left[2,i\,e^{i\,(c+d\,x)}\right]}{4\,a\,d^2}-$$
$$\frac{3\,f^2\,\text{PolyLog}\left[3,-i\,e^{i\,(c+d\,x)}\right]}{4\,a\,d^3}+\frac{3\,f^2\,\text{PolyLog}\left[3,i\,e^{i\,(c+d\,x)}\right]}{4\,a\,d^3}-\frac{3\,f\,(e+f\,x)\,\text{Sec}[c+d\,x]}{4\,a\,d^2}-$$
$$\frac{f^2\,\text{Sec}[c+d\,x]^2}{12\,a\,d^3}-\frac{f\,(e+f\,x)\,\text{Sec}[c+d\,x]^3}{6\,a\,d^2}-\frac{(e+f\,x)^2\,\text{Sec}[c+d\,x]^4}{4\,a\,d}+$$
$$\frac{f\,(e+f\,x)\,\text{Tan}[c+d\,x]}{3\,a\,d^2}+\frac{f^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{12\,a\,d^3}+\frac{3\,(e+f\,x)^2\,\text{Sec}[c+d\,x]\,\text{Tan}[c+d\,x]}{8\,a\,d}+$$
$$\frac{f\,(e+f\,x)\,\text{Sec}[c+d\,x]^2\,\text{Tan}[c+d\,x]}{6\,a\,d^2}+\frac{(e+f\,x)^2\,\text{Sec}[c+d\,x]^3\,\text{Tan}[c+d\,x]}{4\,a\,d}$$

Result (type 4, 1680 leaves):

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

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

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

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

$$\left(-3 d^2 e^2 \operatorname{Cos}\left[\frac{c}{2}\right]-d e f \operatorname{Cos}\left[\frac{c}{2}\right]-f^2 \operatorname{Cos}\left[\frac{c}{2}\right]-6 d^2 e f x \operatorname{Cos}\left[\frac{c}{2}\right]-d f^2 x \operatorname{Cos}\left[\frac{c}{2}\right]-3 d^2 f^2 x^2 \operatorname{Cos}\left[\frac{c}{2}\right]-3 d^2 e^2 \operatorname{Sin}\left[\frac{c}{2}\right]+d e f \operatorname{Sin}\left[\frac{c}{2}\right]-f^2 \operatorname{Sin}\left[\frac{c}{2}\right]-6 d^2 e f x \operatorname{Sin}\left[\frac{c}{2}\right]+d f^2 x \operatorname{Sin}\left[\frac{c}{2}\right]-3 d^2 f^2 x^2 \operatorname{Sin}\left[\frac{c}{2}\right]\right) \Big/ \left(12 a d^3 \left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)^2\right)+\frac{7 \left(e f \operatorname{Sin}\left[\frac{d x}{2}\right]+f^2 x \operatorname{Sin}\left[\frac{d x}{2}\right]\right)}{6 a d^2 \left(\operatorname{Cos}\left[\frac{c}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}\right]\right)\left(\operatorname{Cos}\left[\frac{c}{2}+\frac{d x}{2}\right]+\operatorname{Sin}\left[\frac{c}{2}+\frac{d x}{2}\right]\right)}$$

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

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

Optimal (type 4, 241 leaves, 11 steps):

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

Result (type 4, 1171 leaves):

$$\frac{-6 d e-f+6 c f-6 f (c+d x)}{24 d^2 (a+a \operatorname{Sin}[c+d x])}+\frac{-d e+c f-f (c+d x)}{8 d^2 \left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2 (a+a \operatorname{Sin}[c+d x])}+\frac{f \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]}{12 d^2 \left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)(a+a \operatorname{Sin}[c+d x])}+\frac{7 f \operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)}{12 d^2 (a+a \operatorname{Sin}[c+d x])}+\left(3 (c+d x)(2 d e-2 c f+f (c+d x))\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2\right) \Big/ \left(16 d^2 (a+a \operatorname{Sin}[c+d x])\right)+\left(3 e \left(\frac{1}{2}(-c-d x)-\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)\left(\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]+\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2\right) \Big/ (8 d (a+a \operatorname{Sin}[c+d x]))-\left(3 c f \left(\frac{1}{2}(-c-d x)-\operatorname{Log}\left[\operatorname{Cos}\left[\frac{1}{2}(c+d x)\right]-\operatorname{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\right)\right.$$

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

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

$$\int\frac{\text{Sec}[c+d x]^3}{a+a\,\text{Sin}[c+d x]}\,dx$$

Optimal (type 3, 77 leaves, 4 steps):

$$\frac{3\,\text{ArcTanh}[\text{Sin}[c+d x]]}{8 a d}+\frac{1}{8 d(a-a\,\text{Sin}[c+d x])}-\frac{a}{8 d(a+a\,\text{Sin}[c+d x])^2}-\frac{1}{4 d(a+a\,\text{Sin}[c+d x])}$$

Result (type 3, 190 leaves):

$$-\left(\left(\left(2+\frac{1}{\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}+3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2-3\,\text{Log}\left[\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2-\frac{\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]+\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}{\left(\text{Cos}\left[\frac{1}{2}(c+d x)\right]-\text{Sin}\left[\frac{1}{2}(c+d x)\right]\right)^2}\right)\Big/\left(8\,d\,(a+a\,\text{Sin}[c+d x])\right)\right)$$

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

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

Optimal (type 4, 432 leaves, 11 steps):

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

Result (type 4, 1068 leaves):

$$-\frac{1}{4\,b\,d^4}\,i\,\Bigg(4\,d^4\,e^3\,x+6\,d^4\,e^2\,f\,x^2+4\,d^4\,e\,f^2\,x^3+d^4\,f^3\,x^4-$$

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 295: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 320 leaves, 9 steps):

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

Result (type 4, 647 leaves):

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

Problem 298: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 618 leaves, 18 steps):

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

Result (type 4, 1588 leaves):

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

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

$$(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])+3\,i\,\sqrt{a^2-b^2}\,d^3\,e\,f^2\,x^2$$

$$\mathrm{Log}\left[1+\frac{b\,(\mathrm{Cos}[2\,c+d\,x]+i\,\mathrm{Sin}[2\,c+d\,x])}{i\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\right]\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])+$$

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

$$(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])+3\,\sqrt{a^2-b^2}\,d^2\,f\,(e+f\,x)^2$$

$$\mathrm{PolyLog}\left[2,-\frac{b\,(\mathrm{Cos}[2\,c+d\,x]+i\,\mathrm{Sin}[2\,c+d\,x])}{i\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])^2}-a\,\mathrm{Sin}[c]}\right]$$

$$(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])-3\,\sqrt{a^2-b^2}\,d^2\,f\,(e+f\,x)^2\,\mathrm{PolyLog}\Big[2,$$

$$\frac{b\,(\mathrm{Cos}[2\,c+d\,x]+i\,\mathrm{Sin}[2\,c+d\,x])}{-i\,a\,\mathrm{Cos}[c]+\sqrt{(-a^2+b^2)\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])^2}+a\,\mathrm{Sin}[c]}\Big]\,(\mathrm{Cos}[c]+i\,\mathrm{Sin}[c])+$$

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

$$\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)+6\,\mathrm{i}\,\sqrt{a^2-b^2}\;d\,f^3\,x\,\text{PolyLog}\Big[3,$$

$$-\frac{b\left(\text{Cos}[2c+dx]+\mathrm{i}\,\text{Sin}[2c+dx]\right)}{\mathrm{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\Big]\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)-$$

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

$$\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)+6\sqrt{a^2-b^2}\;f^3\,\text{PolyLog}\Big[4,$$

$$\frac{b\left(\text{Cos}[2c+dx]+\mathrm{i}\,\text{Sin}[2c+dx]\right)}{-\mathrm{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]}\Big]\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)+$$

$$3\sqrt{a^2-b^2}\;d^3\,e^2\,f\,x\,\text{Log}\Big[1-\left(b\left(\text{Cos}[2c+dx]+\mathrm{i}\,\text{Sin}[2c+dx]\right)\right)\Big/$$

$$\left(-\mathrm{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\Big]\left(-\mathrm{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

$$3\sqrt{a^2-b^2}\;d^3\,e\,f^2\,x^2\,\text{Log}\Big[1-\left(b\left(\text{Cos}[2c+dx]+\mathrm{i}\,\text{Sin}[2c+dx]\right)\right)\Big/$$

$$\left(-\mathrm{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\Big]\left(-\mathrm{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

$$\sqrt{a^2-b^2}\;d^3\,f^3\,x^3\,\text{Log}\Big[1-\left(b\left(\text{Cos}[2c+dx]+\mathrm{i}\,\text{Sin}[2c+dx]\right)\right)\Big/$$

$$\left(-\mathrm{i}\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+\mathrm{i}\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\Big]\left(-\mathrm{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

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

$$\left(-\mathrm{i}\,\text{Cos}[c]+\text{Sin}[c]\right)+$$

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

$$\left(-\mathrm{i}\,\text{Cos}[c]+\text{Sin}[c]\right)-2\,\mathrm{i}\,d^3\,e^3\,\text{ArcTan}\left[\frac{b\,\text{Cos}[c+dx]+\mathrm{i}\left(a+b\,\text{Sin}[c+dx]\right)}{\sqrt{a^2-b^2}}\right]$$

$$\left.\left.\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2c]+\mathrm{i}\,\text{Sin}[2c]\right)}\right)-12\,b\,f\left(-2f^2+d^2\left(e+fx\right)^2\right)\text{Sin}[c+dx]\right)$$

Problem 302: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 737 leaves, 21 steps):

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

Result (type 4, 3279 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(-i\,d^3\,e^3+3\,d^2\,e^2\,f+6\,i\,d\,e\,f^2-6\,f^3\right)\left(\frac{a\,\text{Cos}[c]}{2\,b^2\,d^4}+\frac{i\,a\,\text{Sin}[c]}{2\,b^2\,d^4}\right)-\frac{1}{2\,b^2\,d^2}$$

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

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

$$i\,a\,d^2\,e^2\,f\,\text{Sin}[c]-2\,a\,d\,e\,f^2\,\text{Sin}[c]-2\,i\,a\,f^3\,\text{Sin}[c]\Big)\Bigg)\left(\text{Cos}[d\,x]+i\,\text{Sin}[d\,x]\right)+$$

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

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

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

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

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

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

$$2\,i\,d^2\,e^2\,f\,\text{Sin}[2\,c]-2\,d\,e\,f^2\,\text{Sin}[2\,c]-i\,f^3\,\text{Sin}[2\,c]\Big)\Bigg)\left(\text{Cos}[2\,d\,x]+i\,\text{Sin}[2\,d\,x]\right)$$

Problem 303: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 548 leaves, 16 steps):

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

Result (type 4, 2397 leaves):

$$\frac{1}{48 b^3 d^3} e^{-2 i c} \Bigg(48 i a^2 d^3 e^2 e^{2 i c} x-48 i b^2 d^3 e^2 e^{2 i c} x+48 i a^2 d^3 e e^{2 i c} f x^2-48 i b^2 d^3 e e^{2 i c} f x^2+$$
$$16 i a^2 d^3 e^{2 i c} f^2 x^3-16 i b^2 d^3 e^{2 i c} f^2 x^3-48 i a^2 d^2 e^2 e^{2 i c} \operatorname{ArcTan}\left[\frac{2 a e^{i (c+d x)}}{b \left(-1+e^{2 i (c+d x)}\right)}\right]+$$
$$48 i b^2 d^2 e^2 e^{2 i c} \operatorname{ArcTan}\left[\frac{2 a e^{i (c+d x)}}{b \left(-1+e^{2 i (c+d x)}\right)}\right]+24 i a b d^2 e^2 e^{i c} \operatorname{Cos}[d x]-$$
$$24 i a b d^2 e^2 e^{3 i c} \operatorname{Cos}[d x]+48 a b d e e^{i c} f \operatorname{Cos}[d x]+48 a b d e e^{3 i c} f \operatorname{Cos}[d x]-$$
$$48 i a b e^{i c} f^2 \operatorname{Cos}[d x]+48 i a b e^{3 i c} f^2 \operatorname{Cos}[d x]+48 i a b d^2 e e^{i c} f x \operatorname{Cos}[d x]-$$
$$48 i a b d^2 e e^{3 i c} f x \operatorname{Cos}[d x]+48 a b d e^{i c} f^2 x \operatorname{Cos}[d x]+48 a b d e^{3 i c} f^2 x \operatorname{Cos}[d x]+$$
$$24 i a b d^2 e^{i c} f^2 x^2 \operatorname{Cos}[d x]-24 i a b d^2 e^{3 i c} f^2 x^2 \operatorname{Cos}[d x]+6 b^2 d^2 e^2 \operatorname{Cos}[2 d x]+$$
$$6 b^2 d^2 e^2 e^{4 i c} \operatorname{Cos}[2 d x]-6 i b^2 d e f \operatorname{Cos}[2 d x]+6 i b^2 d e e^{4 i c} f \operatorname{Cos}[2 d x]-3 b^2 f^2 \operatorname{Cos}[2 d x]-$$
$$3 b^2 e^{4 i c} f^2 \operatorname{Cos}[2 d x]+12 b^2 d^2 e f x \operatorname{Cos}[2 d x]+12 b^2 d^2 e e^{4 i c} f x \operatorname{Cos}[2 d x]-$$
$$6 i b^2 d f^2 x \operatorname{Cos}[2 d x]+6 i b^2 d e^{4 i c} f^2 x \operatorname{Cos}[2 d x]+6 b^2 d^2 f^2 x^2 \operatorname{Cos}[2 d x]+$$
$$6 b^2 d^2 e^{4 i c} f^2 x^2 \operatorname{Cos}[2 d x]-24 a^2 d^2 e^2 e^{2 i c} \operatorname{Log}\left[4 a^2 e^{2 i (c+d x)}+b^2 \left(-1+e^{2 i (c+d x)}\right)^2\right]+$$
$$24 b^2 d^2 e^2 e^{2 i c} \operatorname{Log}\left[4 a^2 e^{2 i (c+d x)}+b^2 \left(-1+e^{2 i (c+d x)}\right)^2\right]-$$
$$96 a^2 d^2 e e^{2 i c} f x \operatorname{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right]+$$
$$96 b^2 d^2 e e^{2 i c} f x \operatorname{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right]-$$

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

Problem 304: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 351 leaves, 13 steps):

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

Result (type 4, 816 leaves):

$$\frac{1}{8 b^3 d^2}\Bigg(8 a b f \operatorname{Cos}[c+d x]+2 b^2 d (e+f x) \operatorname{Cos}[2 (c+d x)]-8 a^2 d e \operatorname{Log}\left[1+\frac{b \operatorname{Sin}[c+d x]}{a}\right]+8 b^2 d e \operatorname{Log}\left[1+\frac{b \operatorname{Sin}[c+d x]}{a}\right]+8 a^2 c f \operatorname{Log}\left[1+\frac{b \operatorname{Sin}[c+d x]}{a}\right]-8 b^2 c f \operatorname{Log}\left[1+\frac{b \operatorname{Sin}[c+d x]}{a}\right]-a^2 f \Bigg(i (-2 c+\pi-2 d x)^2-32 i \operatorname{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right] \operatorname{ArcTan}\left[\frac{(a-b) \operatorname{Cot}\left[\frac{1}{4} (2 c+\pi+2 d x)\right]}{\sqrt{a^2-b^2}}\right]-4 \left(-2 c+\pi-2 d x+4 \operatorname{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1-\frac{i \left(-a+\sqrt{a^2-b^2}\right) e^{-i (c+d x)}}{b}\right]-4 \left(-2 c+\pi-2 d x-4 \operatorname{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right) \operatorname{Log}\left[1+\frac{i \left(a+\sqrt{a^2-b^2}\right) e^{-i (c+d x)}}{b}\right]+4 (-2 c+\pi-2 d x) \operatorname{Log}[a+b \operatorname{Sin}[c+d x]]+8 (c+d x) \operatorname{Log}[a+b \operatorname{Sin}[c+d x]]+8 i \left(\operatorname{PolyLog}\left[2, \frac{i \left(-a+\sqrt{a^2-b^2}\right) e^{-i (c+d x)}}{b}\right]+\operatorname{PolyLog}\left[2, -\frac{i \left(a+\sqrt{a^2-b^2}\right) e^{-i (c+d x)}}{b}\right]\right)\Bigg)+$$

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

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

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

$$4 \left(-2 c+\pi-2 d x\right) \text{Log}[a+b \text{Sin}[c+d x]]+8 (c+d x) \text{Log}[a+b \text{Sin}[c+d x]]+$$

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

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

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

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

Optimal (type 4, 937 leaves, 29 steps):

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

Result (type 4, 1977 leaves):

$$-\frac{1}{4 (a-b) (a+b) d^4}\Bigg(8 i a d^3 e^3 \text{ArcTan}\left[e^{i (c+d x)}\right]+4 i b d^3 e^3 \text{ArcTan}\left[\frac{2 a e^{i (c+d x)}}{b \left(-1+e^{2 i (c+d x)}\right)}\right]-12 a d^3 e^2 f x \text{Log}\left[1-i e^{i (c+d x)}\right]-12 a d^3 e f^2 x^2 \text{Log}\left[1-i e^{i (c+d x)}\right]-4 a d^3 f^3 x^3 \text{Log}\left[1-i e^{i (c+d x)}\right]+12 a d^3 e^2 f x \text{Log}\left[1+i e^{i (c+d x)}\right]+12 a d^3 e f^2 x^2 \text{Log}\left[1+i e^{i (c+d x)}\right]+4 a d^3 f^3 x^3 \text{Log}\left[1+i e^{i (c+d x)}\right]-4 b d^3 e^3 \text{Log}\left[1+e^{2 i (c+d x)}\right]-12 b d^3 e^2 f x \text{Log}\left[1+e^{2 i (c+d x)}\right]-12 b d^3 e f^2 x^2 \text{Log}\left[1+e^{2 i (c+d x)}\right]-4 b d^3 f^3 x^3 \text{Log}\left[1+e^{2 i (c+d x)}\right]+2 b d^3 e^3 \text{Log}\left[4 a^2 e^{2 i (c+d x)}+b^2 \left(-1+e^{2 i (c+d x)}\right)^2\right]+12 b d^3 e^2 f x \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right]+12 b d^3 e f^2 x^2 \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right]+4 b d^3 f^3 x^3 \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right]+12 b d^3 e^2 f x$$

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

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

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

$$12\,i\,b\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,-e^{2 i\,(c+d x)}\right]+6\,i\,b\,d^2\,f^3\,x^2\,\text{PolyLog}\left[2,-e^{2 i\,(c+d x)}\right]-$$

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

$$24\,i\,b\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,\frac{i\,b\,e^{i\,(2c+d x)}}{a\,e^{i c}+i\sqrt{\left(-a^2+b^2\right)e^{2 i c}}}\right]-$$

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

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

$$24\,i\,b\,d^2\,e\,f^2\,x\,\text{PolyLog}\left[2,-\frac{b\,e^{i\,(2c+d x)}}{i\,a\,e^{i c}+\sqrt{\left(-a^2+b^2\right)e^{2 i c}}}\right]-$$

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

$$24\,a\,d\,f^3\,x\,\text{PolyLog}\left[3,-i\,e^{i\,(c+d x)}\right]-24\,a\,d\,e\,f^2\,\text{PolyLog}\left[3,i\,e^{i\,(c+d x)}\right]-$$

$$24\,a\,d\,f^3\,x\,\text{PolyLog}\left[3,i\,e^{i\,(c+d x)}\right]-6\,b\,d\,e\,f^2\,\text{PolyLog}\left[3,-e^{2 i\,(c+d x)}\right]-$$

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

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

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

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

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

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

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

Problem 308: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \operatorname{Sec}[c+d x]}{a+b \operatorname{Sin}[c+d x]} \, dx$$

Optimal (type 4, 413 leaves, 19 steps):

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

Result (type 4, 2580 leaves):

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

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

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

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

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

$$\left(-c+\frac{\pi}{2}-d x\right) \operatorname{Log}[a+b \operatorname{Sin}[c+d x]]-$$

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

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

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

$$\left.(a-b) \text{Log}\left[1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]-(a+b) \text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]\right)+$$

$$b\left(-2(c+d x) \text{Log}\left[\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right]+2(c+d x) \text{Log}\left[-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]-\right.$$

$$2 \mathrm{i} \text{Log}\left[\frac{1}{2}\left(1-\mathrm{i} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right] \text{Log}\left[-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]+$$

$$\mathrm{i} \text{Log}\left[-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]^2+2(c+d x) \text{Log}\left[\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]+$$

$$2 \mathrm{i} \text{Log}\left[\frac{1}{2}\left(1+\mathrm{i} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right] \text{Log}\left[\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]-$$

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

$$\left.\left.2 \mathrm{i} \text{PolyLog}\left[2,\frac{1}{2}\left(1+\mathrm{i} \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)\right)+$$

$$2 \mathrm{i}(a-b)\left(\text{Log}\left[1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]\left(\text{Log}\left[\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(-\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]-\right.\right.$$

$$\left.\text{Log}\left[\frac{1}{2}\left((1+\mathrm{i})+(1-\mathrm{i}) \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)+\text{PolyLog}\left[2,\left(-\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\right.$$

$$\left.\left.\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]-\text{PolyLog}\left[2,\left(-\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)+$$

$$2 \mathrm{i}(a+b)\left(\left(-\text{Log}\left[\frac{1}{2}\left((1+\mathrm{i})-(1-\mathrm{i}) \text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]+\text{Log}\left[\right.\right.\right.$$

$$\left.\left.\left(-\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\left(\mathrm{i}+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right) \text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]-\text{PolyLog}\left[2,\right.$$

$$\left.\left.\left.\left.\left(\frac{1}{2}-\frac{\mathrm{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]+\text{PolyLog}\left[2,\left(\frac{1}{2}+\frac{\mathrm{i}}{2}\right)\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)\right)\right)$$

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

$$\left.\left.\text{Tan}[c+d x]\right)\right) \Big/$$

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

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

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

$$\left.\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(2\left(1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)+\text{Log}\left[1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]\right.$$

$$\left.\left(\frac{\left(\frac{1}{2}-\frac{i}{2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{(1+i)-(1-i)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}+\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(i+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}\right)\right)+$$

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

$$\left.\left.\left.\left.\left.\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(2\left(1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)\right)+$$

$$\left(\text{Log}\left[1+\left(\frac{1}{2}-\frac{i}{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/$$

$$\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)-\left(\text{Log}\left[1+\left(\frac{1}{2}+\frac{i}{2}\right)\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right]\right.$$

$$\left.\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2\right)\Big/\left(2\left(-1+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)\right)+\text{Log}\left[1-\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right]$$

$$\left.\left.\left.\left.\left.\left(\frac{\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{2\left(-i+\text{Tan}\left[\frac{1}{2}(c+d x)\right]\right)}-\frac{\left(\frac{1}{2}-\frac{i}{2}\right)\text{Sec}\left[\frac{1}{2}(c+d x)\right]^2}{(1+i)+(1-i)\,\text{Tan}\left[\frac{1}{2}(c+d x)\right]}\right)\right)\right)\right)\right)\right)$$

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

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

Optimal (type 4, 923 leaves, 29 steps):

$$-\frac{i a (e+f x)^3}{(a^2-b^2) d}-\frac{6 i b f (e+f x)^2 \text{ArcTan}[e^{i (c+d x)}]}{(a^2-b^2) d^2}+$$

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

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

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

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

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

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

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

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

Result (type 4, 2241 leaves):

$$\frac{b (e+f x)^3 \text{Sec}[c]}{(-a^2+b^2) d}-\frac{1}{(a^2-b^2)^{3/2} d^4 \sqrt{(-a^2+b^2) (\text{Cos}[2 c]+i \text{Sin}[2 c])}}$$

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

$$(\text{Cos}[c]+i \text{Sin}[c])+3 i \sqrt{a^2-b^2} d^3 e f^2 x^2$$

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

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

$$(\text{Cos}[c]+i \text{Sin}[c])+3 \sqrt{a^2-b^2} d^2 f (e+f x)^2$$

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

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

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

Problem 311: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 659 leaves, 24 steps) :

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

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

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

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

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

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

Result (type 4, 1368 leaves):

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

$$\left(2\, a\, e\, f\, \text{Sec}[c]\, \left(\text{Cos}[c]\, \text{Log}[\text{Cos}[c]\, \text{Cos}[d x]-\text{Sin}[c]\, \text{Sin}[d x]]+d\, x\, \text{Sin}[c]\right)\right) \Big/$$

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

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

$$\text{Cot}[c]\, \left(i\, d\, x\, (-\pi-2\, \text{ArcTan}[\text{Cot}[c]])-\pi\, \text{Log}\left[1+e^{-2\, i\, d x}\right]-2\, (d\, x-\text{ArcTan}[\text{Cot}[c]])\right.$$

$$\text{Log}\left[1-e^{2\, i\,(d x-\text{ArcTan}[\text{Cot}[c]])}\right]+\pi\, \text{Log}[\text{Cos}[d x]]-2\, \text{ArcTan}[\text{Cot}[c]]$$

$$\left.\left.\left.\text{Log}[\text{Sin}[d x-\text{ArcTan}[\text{Cot}[c]]]]+i\, \text{PolyLog}\left[2,\, e^{2\, i\,(d x-\text{ArcTan}[\text{Cot}[c]])}\right]\right)\right)\, \text{Sec}[c]\right) \Big/$$

$$\left((a^2-b^2)\, d^3\, \sqrt{\text{Csc}[c]^2\, \left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)+\frac{1}{(a^2-b^2)\, d^3}2$$

b

f^2

$$\left(-\frac{1}{\sqrt{1+\text{Cot}[c]^2}}\text{Csc}[c]\left((d\,x-\text{ArcTan}[\text{Cot}[c]])\left(\text{Log}\left[1-e^{i(d\,x-\text{ArcTan}[\text{Cot}[c]])}\right]-\text{Log}\left[1+e^{i(d\,x-\text{ArcTan}[\text{Cot}[c]])}\right]\right)+i\left(\text{PolyLog}\left[2,-e^{i(d\,x-\text{ArcTan}[\text{Cot}[c]])}\right]-\text{PolyLog}\left[2,e^{i(d\,x-\text{ArcTan}[\text{Cot}[c]])}\right]\right)\right)+\frac{2\,\text{ArcTan}[\text{Cot}[c]]\,\text{ArcTanh}\left[\frac{\text{Sin}[c]+\text{Cos}[c]\,\text{Tan}\left[\frac{d\,x}{2}\right]}{\sqrt{\text{Cos}[c]^2+\text{Sin}[c]^2}}\right]}{\sqrt{\text{Cos}[c]^2+\text{Sin}[c]^2}}\right)-$$

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

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

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

$$i\left(-2\sqrt{a^2-b^2}\,f^2\,\text{PolyLog}\left[3,-\left(\left(b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\right)\middle/\left(i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]\right)\right)\right]\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+\right.$$

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

$$d^2\left(\sqrt{a^2-b^2}\,f\,x\,(2\,e+f\,x)\left(-\text{Log}\left[1+\left(b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\right)\middle/\left(i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]\right)\right]+\right.\right.$$

$$\left.\text{Log}\left[1-\left(b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\right)\middle/\left(-i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\right)\right]\right)$$

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

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

Problem 317: Attempted integration timed out after 120 seconds.

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

Optimal (type 8, 29 leaves, 0 steps):

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

Result (type 1, 1 leaves):

???

Problem 323: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 357 leaves, 12 steps):

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

Result (type 4, 1104 leaves):

$$\frac{f^2\,x\,\text{Cot}[c]}{b\,(-a^2+b^2)\,d^2}-\frac{1}{2\,b\,(-a^2+b^2)\,d^2\,(-1+e^{2\,i\,c})}$$

$$i\,e^{i\,c}\,f\,\Bigg(4\,e^{i\,c}\,f\,x+\frac{4\,i\,a\,e\,e^{-i\,c}\,\text{ArcTan}\Big[\frac{i\,a+b\,e^{i\,(c+d\,x)}}{\sqrt{a^2-b^2}}\Big]}{\sqrt{a^2-b^2}}-\frac{4\,i\,a\,e\,e^{i\,c}\,\text{ArcTan}\Big[\frac{i\,a+b\,e^{i\,(c+d\,x)}}{\sqrt{a^2-b^2}}\Big]}{\sqrt{a^2-b^2}}+$$

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

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

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

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

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

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

$$\frac{f^2\,x\,\text{Csc}\big[\frac{c}{2}\big]\,\text{Sec}\big[\frac{c}{2}\big]\,\big(\text{Cos}\big[\frac{c}{2}\big]-\text{Sin}\big[\frac{c}{2}\big]\big)\,\big(\text{Cos}\big[\frac{c}{2}\big]+\text{Sin}\big[\frac{c}{2}\big]\big)}{2\,b\,(-a+b)\,(a+b)\,d^2}-$$

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

$$\Big(\text{Csc}\Big[\frac{c}{2}\Big]\,\text{Sec}\Big[\frac{c}{2}\Big]\,\big(-a\,e\,f\,\text{Cos}[c]-a\,f^2\,x\,\text{Cos}[c]-b\,e\,f\,\text{Sin}[d\,x]-b\,f^2\,x\,\text{Sin}[d\,x]\big)\Big)\Big/$$
$$\big(2\,(a-b)\,b\,(a+b)\,d^2\,(a+b\,\text{Sin}[c+d\,x])\big)$$

Problem 324: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 753 leaves, 19 steps) :

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

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

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

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

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

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

Result (type 4, 8931 leaves):

$$-\frac{1}{b\,(-a^2+b^2)\,d^2\,(-1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c])}\,3\,i\,f\,(\text{Cos}[c]+i\,\text{Sin}[c])$$

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

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

$$e\,f\,\Bigg(-4\,\sqrt{a^2-b^2}\,d\,x+4\,a\,\text{ArcTan}\left[\frac{i\,a+b\,\text{Cos}[c+d\,x]+i\,b\,\text{Sin}[c+d\,x]}{\sqrt{a^2-b^2}}\right]+2\,\sqrt{a^2-b^2}\,\text{ArcTan}\Big[$$

$$\frac{2\,a\,(\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x])}{b\,(-1+\text{Cos}[2\,c+2\,d\,x]+i\,\text{Sin}[2\,c+2\,d\,x])}\Big]-i\,\sqrt{a^2-b^2}\,\text{Log}\Big[4\,a^2\,\text{Cos}[2\,c+2\,d\,x]+$$

$$b^2\,(-1+\text{Cos}[2\,c+2\,d\,x]+i\,\text{Sin}[2\,c+2\,d\,x])^2+4\,i\,a^2\,\text{Sin}[2\,c+2\,d\,x]\Big]\Bigg)$$

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

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

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

$$(\operatorname{Cos}[c] + i \operatorname{Sin}[c]) + 2 i e f x \operatorname{Sin}[c] + i f^2 x^2 \operatorname{Sin}[c] - 2 e f x (\operatorname{Cos}[c] - i \operatorname{Sin}[c]) (-1+\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]) - f^2 x^2 (\operatorname{Cos}[c] - i \operatorname{Sin}[c]) (-1+\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]) + 2 b f^2 (\operatorname{Cos}[c] - i \operatorname{Sin}[c])$$

$$\Bigg(-\Bigg(\Bigg(x^2 \Big/ \left(2 \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right) + \left(i x \operatorname{Log}\left[1 + (b (\operatorname{Cos}[2 c+d x] + i \operatorname{Sin}[2 c+d x])) \Big/ \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right]\right) \Big/ \left(d \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right) + \operatorname{PolyLog}\left[2, -\left((b (\operatorname{Cos}[2 c+d x] + i \operatorname{Sin}[2 c+d x])) \Big/ \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right)\right] \Big/ \left(d^2 \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right)\Bigg) \Big/$$

$$\left(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i a^2 \operatorname{Sin}[2 c] + i b^2 \operatorname{Sin}[2 c])} + \frac{1}{b} 2 i \operatorname{Sin}[2 c] \sqrt{(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i a^2 \operatorname{Sin}[2 c] + i b^2 \operatorname{Sin}[2 c])}\right)\Bigg) +$$

$$\Bigg(x^2 \Big/ \left(2 \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right) + \left(i x \operatorname{Log}\left[1 + (b (\operatorname{Cos}[2 c+d x] + i \operatorname{Sin}[2 c+d x])) \Big/ \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right]\right) \Big/ \left(d \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right) + \operatorname{PolyLog}\left[2, -\left((b (\operatorname{Cos}[2 c+d x] + i \operatorname{Sin}[2 c+d x])) \Big/ \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right)\right] \Big/ \left(d^2 \left(i a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2) (\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c])}\right)\right)\Bigg) \Big/$$

$$\Bigg(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i a^2 \operatorname{Sin}[2 c] + i b^2 \operatorname{Sin}[2 c])} + \frac{1}{b} 2 i \operatorname{Sin}[2 c] \sqrt{(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i a^2 \operatorname{Sin}[2 c] +}$$

$$
\begin{aligned}
&\quad i\, b^2 \operatorname{Sin}[2 c]\Big)\Big)\Big) - 2 b f^2 \left(\operatorname{Cos}[c] + i \operatorname{Sin}[c]\right) \\
&\Bigg(-\Bigg(\Bigg(x^2 \Big/ \left(2 \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right) + \\
&\quad \Bigg(i\, x \operatorname{Log}\Big[1 + \left(b \left(\operatorname{Cos}[2 c + d x] + i \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \\
&\qquad \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\Big]\Bigg) \Big/ \\
&\quad \left(d \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right) + \\
&\quad \operatorname{PolyLog}\Big[2, -\Big(\left(b \left(\operatorname{Cos}[2 c + d x] + i \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \\
&\qquad \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\Big)\Big] \Big/ \\
&\quad \left(d^2 \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right)\Bigg) \Big/ \\
&\quad \Bigg(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i\, a^2 \operatorname{Sin}[2 c] + i\, b^2 \operatorname{Sin}[2 c]\right)} + \\
&\quad \frac{1}{b} 2\, i \operatorname{Sin}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i\, a^2 \operatorname{Sin}[2 c] + i\, b^2 \operatorname{Sin}[2 c]\right)}\Bigg)\Bigg) + \\
&\Bigg(x^2 \Big/ \left(2 \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right) + \\
&\quad \Bigg(i\, x \operatorname{Log}\Big[1 + \left(b \left(\operatorname{Cos}[2 c + d x] + i \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \\
&\qquad \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\Big]\Bigg) \Big/ \\
&\quad \left(d \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right) + \\
&\quad \operatorname{PolyLog}\Big[2, -\Big(\left(b \left(\operatorname{Cos}[2 c + d x] + i \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \\
&\qquad \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\Big)\Big] \Big/ \\
&\quad \left(d^2 \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right)\Bigg) \Big/ \\
&\quad \Bigg(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i\, a^2 \operatorname{Sin}[2 c] + i\, b^2 \operatorname{Sin}[2 c]\right)} + \\
&\quad \frac{1}{b} 2\, i \operatorname{Sin}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - i\, a^2 \operatorname{Sin}[2 c] + i\, b^2 \operatorname{Sin}[2 c]\right)}\Bigg)\Bigg) - \\
&2 a d e f \Bigg(\Bigg(\Bigg(x^2 \Big/ \left(2 \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right) + \\
&\quad \Bigg(i\, x \operatorname{Log}\Big[1 + \left(b \left(\operatorname{Cos}[2 c + d x] + i \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \\
&\qquad \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\Big]\Bigg) \Big/ \\
&\quad \left(d \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\right) + \\
&\quad \operatorname{PolyLog}\Big[2, -\Big(\left(b \left(\operatorname{Cos}[2 c + d x] + i \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \\
&\qquad \left(i\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + i \operatorname{Sin}[2 c]\right)}\right)\Big)\Big] \Big/
\end{aligned}
$$

$$
\Big(d^2 \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big)
$$

$$
\Big(-\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - (\operatorname{Cos}[2c] - \mathrm{i} \operatorname{Sin}[2c]) \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])}\Big)\Big) \Big/
$$

$$
\Big(b \Big(-\frac{1}{b} 2 \operatorname{Cos}[2c] \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])} + \frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2c] \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])}\Big)\Big) -
$$

$$
\Big(\Big(x^2 \Big/ \Big(2 \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big) +
$$

$$
\Big(\mathrm{i}\, x \operatorname{Log}\Big[1 + (b\, (\operatorname{Cos}[2c + d x] + \mathrm{i} \operatorname{Sin}[2c + d x])) \Big/ \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big]\Big) \Big/
$$

$$
\Big(d \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big) +
$$

$$
\operatorname{PolyLog}\Big[2, -\Big((b\, (\operatorname{Cos}[2c + d x] + \mathrm{i} \operatorname{Sin}[2c + d x])) \Big/ \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big)\Big] \Big/
$$

$$
\Big(d^2 \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big)\Big)
$$

$$
\Big(-\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + (\operatorname{Cos}[2c] - \mathrm{i} \operatorname{Sin}[2c]) \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])}\Big)\Big) \Big/
$$

$$
\Big(b \Big(-\frac{1}{b} 2 \operatorname{Cos}[2c] \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])} + \frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2c] \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])}\Big)\Big)\Big) -
$$

$$
2\, \mathrm{i}\, a f^2 \Big(\Big(\Big(x^2 \Big/ \Big(2 \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big) +
$$

$$
\Big(\mathrm{i}\, x \operatorname{Log}\Big[1 + (b\, (\operatorname{Cos}[2c + d x] + \mathrm{i} \operatorname{Sin}[2c + d x])) \Big/ \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big]\Big) \Big/
$$

$$
\Big(d \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big) +
$$

$$
\operatorname{PolyLog}\Big[2, -\Big((b\, (\operatorname{Cos}[2c + d x] + \mathrm{i} \operatorname{Sin}[2c + d x])) \Big/ \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big)\Big] \Big/
$$

$$
\Big(d^2 \Big(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{(-a^2+b^2)\,(\operatorname{Cos}[2c] + \mathrm{i} \operatorname{Sin}[2c])}\Big)\Big)\Big)
$$

$$
\Big(-\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - (\operatorname{Cos}[2c] - \mathrm{i} \operatorname{Sin}[2c]) \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])}\Big)\Big) \Big/
$$

$$
\Big(b \Big(-\frac{1}{b} 2 \operatorname{Cos}[2c] \sqrt{(-a^2 \operatorname{Cos}[2c] + b^2 \operatorname{Cos}[2c] - \mathrm{i}\, a^2 \operatorname{Sin}[2c] + \mathrm{i}\, b^2 \operatorname{Sin}[2c])} +
$$

$$\frac{1}{b}2\,\mathbb{i}\,\text{Sin}[2\,c]\,\sqrt{\left(-a^2\,\text{Cos}[2\,c]+b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\right)}\Bigg)\Bigg)-$$

$$\Bigg(\Bigg(x^2\Big/\left(2\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)+$$

$$\Bigg(\mathbb{i}\,x\,\text{Log}\Big[1+\left(b\left(\text{Cos}[2\,c+d\,x]+\mathbb{i}\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\Big]\Bigg)\Big/$$

$$\left(d\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)+$$

$$\text{PolyLog}\Big[2,-\Bigg(\left(b\left(\text{Cos}[2\,c+d\,x]+\mathbb{i}\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\Bigg)\Big]\Big/$$

$$\left(d^2\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)\Bigg)$$

$$\Bigg(-\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\left(\text{Cos}[2\,c]-\mathbb{i}\,\text{Sin}[2\,c]\right)\sqrt{\Big(-a^2\,\text{Cos}[2\,c]+}$$

$$b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\Big)\Bigg)\Bigg)\Big/$$

$$\Bigg(b\left(-\frac{1}{b}2\,\text{Cos}[2\,c]\,\sqrt{\left(-a^2\,\text{Cos}[2\,c]+b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\right)}+\right.$$

$$\left.\frac{1}{b}2\,\mathbb{i}\,\text{Sin}[2\,c]\,\sqrt{\left(-a^2\,\text{Cos}[2\,c]+b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\right)}\right)\Bigg)\Bigg)-$$

$$a\,d\,f^2\Bigg(\Bigg(\Bigg(x^3\Big/\left(3\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)+$$

$$\Bigg(\mathbb{i}\,x^2\,\text{Log}\Big[1+\left(b\left(\text{Cos}[2\,c+d\,x]+\mathbb{i}\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\Big]\Bigg)\Big/$$

$$\left(d\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)+$$

$$\Bigg(2\,x\,\text{PolyLog}\Big[2,-\Bigg(\left(b\left(\text{Cos}[2\,c+d\,x]+\mathbb{i}\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\Bigg)\Big]\Bigg)\Big/$$

$$\left(d^2\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)+$$

$$\Bigg(2\,\mathbb{i}\,\text{PolyLog}\Big[3,-\Bigg(\left(b\left(\text{Cos}[2\,c+d\,x]+\mathbb{i}\,\text{Sin}[2\,c+d\,x]\right)\right)\Big/$$

$$\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\Bigg)\Big]\Bigg)\Big/$$

$$\left(d^3\left(\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+\mathbb{i}\,\text{Sin}[2\,c]\right)}\right)\right)\Bigg)$$

$$\Bigg(-\mathbb{i}\,a\,\text{Cos}[c]-a\,\text{Sin}[c]-\left(\text{Cos}[2\,c]-\mathbb{i}\,\text{Sin}[2\,c]\right)\sqrt{\Big(-a^2\,\text{Cos}[2\,c]+}$$

$$b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\Big)\Bigg)\Bigg)\Big/$$

$$\Bigg(b\left(-\frac{1}{b}2\,\text{Cos}[2\,c]\,\sqrt{\left(-a^2\,\text{Cos}[2\,c]+b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\right)}+\right.$$

$$\left.\frac{1}{b}2\,\mathbb{i}\,\text{Sin}[2\,c]\,\sqrt{\left(-a^2\,\text{Cos}[2\,c]+b^2\,\text{Cos}[2\,c]-\mathbb{i}\,a^2\,\text{Sin}[2\,c]+\mathbb{i}\,b^2\,\text{Sin}[2\,c]\right)}\right)\Bigg)-$$

$$\left(\left(x^3\Big/\left(3\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)+\right.\right.$$

$$\left(\mathbb{i}\,x^2\,\mathrm{Log}\Big[1+\left(b\left(\mathrm{Cos}[2\,c+d\,x]+\mathbb{i}\,\mathrm{Sin}[2\,c+d\,x]\right)\right)\Big/\right.$$

$$\left.\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\Big]\right)\Big/$$

$$\left(d\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)+$$

$$\left(2\,x\,\mathrm{PolyLog}\Big[2,-\left(\left(b\left(\mathrm{Cos}[2\,c+d\,x]+\mathbb{i}\,\mathrm{Sin}[2\,c+d\,x]\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)\Big]\right)\Big/$$

$$\left(d^2\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)+$$

$$\left(2\,\mathbb{i}\,\mathrm{PolyLog}\Big[3,-\left(\left(b\left(\mathrm{Cos}[2\,c+d\,x]+\mathbb{i}\,\mathrm{Sin}[2\,c+d\,x]\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)\Big]\right)\Big/$$

$$\left.\left(d^3\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)\right)$$

$$\left(-\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]+\left(\mathrm{Cos}[2\,c]-\mathbb{i}\,\mathrm{Sin}[2\,c]\right)\sqrt{\left(-a^2\,\mathrm{Cos}[2\,c]+\right.}\right.$$

$$\left.\left.b^2\,\mathrm{Cos}[2\,c]-\mathbb{i}\,a^2\,\mathrm{Sin}[2\,c]+\mathbb{i}\,b^2\,\mathrm{Sin}[2\,c]\right)\right)\right)\Big/$$

$$\left(b\left(-\frac{1}{b}2\,\mathrm{Cos}[2\,c]\sqrt{\left(-a^2\,\mathrm{Cos}[2\,c]+b^2\,\mathrm{Cos}[2\,c]-\mathbb{i}\,a^2\,\mathrm{Sin}[2\,c]+\mathbb{i}\,b^2\,\mathrm{Sin}[2\,c]\right)}+\right.\right.$$

$$\left.\left.\left.\frac{1}{b}2\,\mathbb{i}\,\mathrm{Sin}[2\,c]\sqrt{\left(-a^2\,\mathrm{Cos}[2\,c]+b^2\,\mathrm{Cos}[2\,c]-\mathbb{i}\,a^2\,\mathrm{Sin}[2\,c]+\mathbb{i}\,b^2\,\mathrm{Sin}[2\,c]\right)}\right)\right)\right)+$$

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

$$\left(\mathbb{i}\,x\,\mathrm{Log}\Big[1+\left(b\left(\mathrm{Cos}[2\,c+d\,x]+\mathbb{i}\,\mathrm{Sin}[2\,c+d\,x]\right)\right)\Big/\right.$$

$$\left.\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\Big]\right)\Big/$$

$$\left(d\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)+$$

$$\mathrm{PolyLog}\Big[2,-\left(\left(b\left(\mathrm{Cos}[2\,c+d\,x]+\mathbb{i}\,\mathrm{Sin}[2\,c+d\,x]\right)\right)\Big/\right.$$

$$\left.\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)\Big]\Big/$$

$$\left.\left(d^2\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]+\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)\right)$$

$$\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)\left(-\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\left(\mathrm{Cos}[2\,c]-\mathbb{i}\,\mathrm{Sin}[2\,c]\right)\right.$$

$$\left.\left.\sqrt{\left(-a^2\,\mathrm{Cos}[2\,c]+b^2\,\mathrm{Cos}[2\,c]-\mathbb{i}\,a^2\,\mathrm{Sin}[2\,c]+\mathbb{i}\,b^2\,\mathrm{Sin}[2\,c]\right)}\right)\right)\Big/$$

$$\left(b\left(-\frac{1}{b}2\,\mathrm{Cos}[2\,c]\sqrt{\left(-a^2\,\mathrm{Cos}[2\,c]+b^2\,\mathrm{Cos}[2\,c]-\mathbb{i}\,a^2\,\mathrm{Sin}[2\,c]+\mathbb{i}\,b^2\,\mathrm{Sin}[2\,c]\right)}+\right.\right.$$

$$\left.\left.\frac{1}{b}2\,\mathbb{i}\,\mathrm{Sin}[2\,c]\sqrt{\left(-a^2\,\mathrm{Cos}[2\,c]+b^2\,\mathrm{Cos}[2\,c]-\mathbb{i}\,a^2\,\mathrm{Sin}[2\,c]+\mathbb{i}\,b^2\,\mathrm{Sin}[2\,c]\right)}\right)\right)-$$

$$\left(\left(x^2\Big/\left(2\left(\mathbb{i}\,a\,\mathrm{Cos}[c]-a\,\mathrm{Sin}[c]-\sqrt{\left(-a^2+b^2\right)\left(\mathrm{Cos}[2\,c]+\mathbb{i}\,\mathrm{Sin}[2\,c]\right)}\right)\right)+\right.\right.$$

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

$$\left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\Big)\Big] \Big/$$

$$\left(d^2 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right)\Big)$$

$$\left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right) \Big(-\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \left(\operatorname{Cos}[2 c] - \mathrm{i} \operatorname{Sin}[2 c]\right)$$

$$\sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)}\Big)\Big) \Big/$$

$$\Big(b \Big(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)} +$$

$$\frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)}\Big)\Big)\Big) +$$

$$a\, d\, f^2 \Big(\Big(\Big(x^3 \Big/ \left(3 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right) +$$

$$\Big(\mathrm{i}\, x^2 \operatorname{Log}\Big[1 + \left(b \left(\operatorname{Cos}[2 c + d x] + \mathrm{i} \operatorname{Sin}[2 c + d x]\right)\right) \Big/$$

$$\left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\Big]\Big) \Big/$$

$$\left(d \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right) +$$

$$\Big(2 x \operatorname{PolyLog}\Big[2, -\Big(\left(b \left(\operatorname{Cos}[2 c + d x] + \mathrm{i} \operatorname{Sin}[2 c + d x]\right)\right) \Big/$$

$$\left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\Big)\Big]\Big) \Big/$$

$$\left(d^2 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right) +$$

$$\Big(2\, \mathrm{i} \operatorname{PolyLog}\Big[3, -\Big(\left(b \left(\operatorname{Cos}[2 c + d x] + \mathrm{i} \operatorname{Sin}[2 c + d x]\right)\right) \Big/$$

$$\left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\Big)\Big]\Big) \Big/$$

$$\left(d^3 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right)\Big)$$

$$\left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right) \Big(-\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \left(\operatorname{Cos}[2 c] - \mathrm{i} \operatorname{Sin}[2 c]\right)$$

$$\sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)}\Big)\Big) \Big/$$

$$\Big(b \Big(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)} +$$

$$\frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)}\Big)\Big) -$$

$$\Big(\Big(x^3 \Big/ \left(3 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right) +$$

$$\Big(\mathrm{i}\, x^2 \operatorname{Log}\Big[1 + \left(b \left(\operatorname{Cos}[2 c + d x] + \mathrm{i} \operatorname{Sin}[2 c + d x]\right)\right) \Big/$$

$$\left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\Big]\Big) \Big/$$

$$\left(d \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right) +$$

$$\Big(2 x \operatorname{PolyLog}\Big[2, -\Big(\left(b \left(\operatorname{Cos}[2 c + d x] + \mathrm{i} \operatorname{Sin}[2 c + d x]\right)\right) \Big/$$

$$\left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2 + b^2\right) \left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\Big)\Big]\Big) \Big/$$

$$\left(d^2 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right) +$$

$$\left(2\, \mathrm{i} \operatorname{PolyLog}\left[3, -\left(\left(b\left(\operatorname{Cos}[2 c + d x] + \mathrm{i} \operatorname{Sin}[2 c + d x]\right)\right) \Big/ \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right)\right]\right) \Big/$$

$$\left(d^3 \left(\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] - \sqrt{\left(-a^2+b^2\right)\left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)}\right)\right)\Big)$$

$$\left(\operatorname{Cos}[2 c] + \mathrm{i} \operatorname{Sin}[2 c]\right)\left(-\mathrm{i}\, a \operatorname{Cos}[c] - a \operatorname{Sin}[c] + \left(\operatorname{Cos}[2 c] - \mathrm{i} \operatorname{Sin}[2 c]\right)\right.$$

$$\left.\left.\sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)}\right)\right) \Big/$$

$$\left(b \left(-\frac{1}{b} 2 \operatorname{Cos}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)} + \right.\right.$$

$$\left.\left.\left.\left.\frac{1}{b} 2\, \mathrm{i} \operatorname{Sin}[2 c] \sqrt{\left(-a^2 \operatorname{Cos}[2 c] + b^2 \operatorname{Cos}[2 c] - \mathrm{i}\, a^2 \operatorname{Sin}[2 c] + \mathrm{i}\, b^2 \operatorname{Sin}[2 c]\right)}\right)\right)\right)\right) -$$

$$\frac{(e + f x)^3}{2 b d \left(a + b \operatorname{Sin}[c + d x]\right)^2} - \left(3 \operatorname{Csc}\left[\frac{c}{2}\right] \operatorname{Sec}\left[\frac{c}{2}\right] \left(a\, e^2 f \operatorname{Cos}[c] + 2 a e f^2 x \operatorname{Cos}[c] + a f^3 x^2 \operatorname{Cos}[c] + b e^2 f \operatorname{Sin}[d x] + 2 b e f^2 x \operatorname{Sin}[d x] + b f^3 x^2 \operatorname{Sin}[d x]\right)\right) \Big/ \left(4 (a - b) b (a + b) d^2 \left(a + b \operatorname{Sin}[c + d x]\right)\right)$$

Problem 325: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 765 leaves, 33 steps):

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

Result (type 4, 1897 leaves):

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

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

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

$$6\,\mathbb{i}\sqrt{a^2-b^2}\;d\,e\,f^2\,\text{PolyLog}\Big[3,-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

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

$$6\sqrt{a^2-b^2}\;f^3\,\text{PolyLog}\Big[4,-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

$$\left(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c]\right)+$$

$$6\sqrt{a^2-b^2}\;f^3\,\text{PolyLog}\Big[4,\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

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

$$3\sqrt{a^2-b^2}\;d^3 e\,f^2 x^2\,\text{Log}\Big[1-\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

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

$$6\sqrt{a^2-b^2}\;d\,e\,f^2\,\text{PolyLog}\Big[3,\frac{b\,(\text{Cos}[2c+dx]+\mathbb{i}\,\text{Sin}[2c+dx])}{-\mathbb{i}\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+\mathbb{i}\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

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

$$2\,\mathbb{i}\,d^3 e^3\,\text{ArcTan}\Big[\frac{b\,\text{Cos}[c+dx]+\mathbb{i}\,(a+b\,\text{Sin}[c+dx])}{\sqrt{a^2-b^2}}\Big]\sqrt{(-a^2+b^2)\,(\text{Cos}[2c]+\mathbb{i}\,\text{Sin}[2c])}\;\Bigg)$$

Problem 329: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 763 leaves, 34 steps):

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

Result (type 4, 3808 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(e^3\,\text{Csc}[c]\,\left(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]\right)\right)/$$
$$\left(a\,d\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+$$

$$\text{Csc}[c]\,\left(\frac{\text{Cos}[c+d\,x]}{8\,b^2\,d^4}-\frac{i\,\text{Sin}[c+d\,x]}{8\,b^2\,d^4}\right)$$

$$\left(4\,a\,d^4\,e^3\,x\,\text{Cos}[d\,x]+6\,a\,d^4\,e^2\,f\,x^2\,\text{Cos}[d\,x]+4\,a\,d^4\,e\,f^2\,x^3\,\text{Cos}[d\,x]+\right.$$
$$a\,d^4\,f^3\,x^4\,\text{Cos}[d\,x]+4\,a\,d^4\,e^3\,x\,\text{Cos}[2\,c+d\,x]+6\,a\,d^4\,e^2\,f\,x^2\,\text{Cos}[2\,c+d\,x]+$$
$$4\,a\,d^4\,e\,f^2\,x^3\,\text{Cos}[2\,c+d\,x]+a\,d^4\,f^3\,x^4\,\text{Cos}[2\,c+d\,x]-2\,b\,d^3\,e^3\,\text{Cos}[c+2\,d\,x]-$$
$$6\,i\,b\,d^2\,e^2\,f\,\text{Cos}[c+2\,d\,x]+12\,b\,d\,e\,f^2\,\text{Cos}[c+2\,d\,x]+12\,i\,b\,f^3\,\text{Cos}[c+2\,d\,x]-$$
$$6\,b\,d^3\,e^2\,f\,x\,\text{Cos}[c+2\,d\,x]-12\,i\,b\,d^2\,e\,f^2\,x\,\text{Cos}[c+2\,d\,x]+12\,b\,d\,f^3\,x\,\text{Cos}[c+2\,d\,x]-$$
$$6\,b\,d^3\,e\,f^2\,x^2\,\text{Cos}[c+2\,d\,x]-6\,i\,b\,d^2\,f^3\,x^2\,\text{Cos}[c+2\,d\,x]-2\,b\,d^3\,f^3\,x^3\,\text{Cos}[c+2\,d\,x]+$$
$$2\,b\,d^3\,e^3\,\text{Cos}[3\,c+2\,d\,x]+6\,i\,b\,d^2\,e^2\,f\,\text{Cos}[3\,c+2\,d\,x]-12\,b\,d\,e\,f^2\,\text{Cos}[3\,c+2\,d\,x]-$$
$$12\,i\,b\,f^3\,\text{Cos}[3\,c+2\,d\,x]+6\,b\,d^3\,e^2\,f\,x\,\text{Cos}[3\,c+2\,d\,x]+12\,i\,b\,d^2\,e\,f^2\,x\,\text{Cos}[3\,c+2\,d\,x]-$$
$$12\,b\,d\,f^3\,x\,\text{Cos}[3\,c+2\,d\,x]+6\,b\,d^3\,e\,f^2\,x^2\,\text{Cos}[3\,c+2\,d\,x]+6\,i\,b\,d^2\,f^3\,x^2\,\text{Cos}[3\,c+2\,d\,x]+$$
$$2\,b\,d^3\,f^3\,x^3\,\text{Cos}[3\,c+2\,d\,x]-4\,i\,b\,d^3\,e^3\,\text{Sin}[c]-12\,b\,d^2\,e^2\,f\,\text{Sin}[c]+24\,i\,b\,d\,e\,f^2\,\text{Sin}[c]+$$
$$24\,b\,f^3\,\text{Sin}[c]-12\,i\,b\,d^3\,e^2\,f\,x\,\text{Sin}[c]-24\,b\,d^2\,e\,f^2\,x\,\text{Sin}[c]+24\,i\,b\,d\,f^3\,x\,\text{Sin}[c]-$$
$$12\,i\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[c]-12\,b\,d^2\,f^3\,x^2\,\text{Sin}[c]-4\,i\,b\,d^3\,f^3\,x^3\,\text{Sin}[c]+4\,i\,a\,d^4\,e^3\,x\,\text{Sin}[d\,x]+$$
$$6\,i\,a\,d^4\,e^2\,f\,x^2\,\text{Sin}[d\,x]+4\,i\,a\,d^4\,e\,f^2\,x^3\,\text{Sin}[d\,x]+i\,a\,d^4\,f^3\,x^4\,\text{Sin}[d\,x]+$$
$$4\,i\,a\,d^4\,e^3\,x\,\text{Sin}[2\,c+d\,x]+6\,i\,a\,d^4\,e^2\,f\,x^2\,\text{Sin}[2\,c+d\,x]+4\,i\,a\,d^4\,e\,f^2\,x^3\,\text{Sin}[2\,c+d\,x]+$$
$$i\,a\,d^4\,f^3\,x^4\,\text{Sin}[2\,c+d\,x]-2\,i\,b\,d^3\,e^3\,\text{Sin}[c+2\,d\,x]+6\,b\,d^2\,e^2\,f\,\text{Sin}[c+2\,d\,x]+$$
$$12\,i\,b\,d\,e\,f^2\,\text{Sin}[c+2\,d\,x]-12\,b\,f^3\,\text{Sin}[c+2\,d\,x]-6\,i\,b\,d^3\,e^2\,f\,x\,\text{Sin}[c+2\,d\,x]+$$
$$12\,b\,d^2\,e\,f^2\,x\,\text{Sin}[c+2\,d\,x]+12\,i\,b\,d\,f^3\,x\,\text{Sin}[c+2\,d\,x]-6\,i\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[c+2\,d\,x]+$$
$$6\,b\,d^2\,f^3\,x^2\,\text{Sin}[c+2\,d\,x]-2\,i\,b\,d^3\,f^3\,x^3\,\text{Sin}[c+2\,d\,x]+2\,i\,b\,d^3\,e^3\,\text{Sin}[3\,c+2\,d\,x]-$$
$$6\,b\,d^2\,e^2\,f\,\text{Sin}[3\,c+2\,d\,x]-12\,i\,b\,d\,e\,f^2\,\text{Sin}[3\,c+2\,d\,x]+12\,b\,f^3\,\text{Sin}[3\,c+2\,d\,x]+$$
$$6\,i\,b\,d^3\,e^2\,f\,x\,\text{Sin}[3\,c+2\,d\,x]-12\,b\,d^2\,e\,f^2\,x\,\text{Sin}[3\,c+2\,d\,x]-12\,i\,b\,d\,f^3\,x\,\text{Sin}[3\,c+2\,d\,x]+$$
$$\left.6\,i\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[3\,c+2\,d\,x]-6\,b\,d^2\,f^3\,x^2\,\text{Sin}[3\,c+2\,d\,x]+2\,i\,b\,d^3\,f^3\,x^3\,\text{Sin}[3\,c+2\,d\,x]\right)-$$

$$\left(3\,e^2\,f\,\text{Csc}[c]\,\text{Sec}[c]\,\left(d^2\,e^{i\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\left(i\,d\,x\,\left(-\pi+2\,\text{ArcTan}[\text{Tan}[c]]\right)-\right.\right.\right.$$
$$\pi\,\text{Log}\left[1+e^{-2\,i\,d\,x}\right]-2\,\left(d\,x+\text{ArcTan}[\text{Tan}[c]]\right)\,\text{Log}\left[1-e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right]+$$
$$\pi\,\text{Log}[\text{Cos}[d\,x]]+2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+$$

$$\left.\left.\mathrm{i}\,\mathrm{PolyLog}\left[2,\,e^{2\,\mathrm{i}\,(d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]])}\right]\right)\,\mathrm{Tan}[c]\right)\right)\Big/\left(2\,a\,d^2\,\sqrt{\mathrm{Sec}[c]^2\,\left(\mathrm{Cos}[c]^2+\mathrm{Sin}[c]^2\right)}\right)$$

Problem 330: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 566 leaves, 26 steps):

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

Result (type 4, 1740 leaves):

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

$$\frac{1}{6\,a\,b^2\,d^3\,\left(-1+e^{2\,\mathrm{i}\,c}\right)}\left(a^2-b^2\right)\,\Bigg(-12\,\mathrm{i}\,d^3\,e^2\,e^{2\,\mathrm{i}\,c}\,x-12\,\mathrm{i}\,d^3\,e\,e^{2\,\mathrm{i}\,c}\,f\,x^2-4\,\mathrm{i}\,d^3\,e^{2\,\mathrm{i}\,c}\,f^2\,x^3-$$

$$6\,\mathrm{i}\,d^2\,e^2\,\mathrm{ArcTan}\left[\frac{2\,a\,e^{\mathrm{i}\,(c+d\,x)}}{b\,\left(-1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)}\right]+6\,\mathrm{i}\,d^2\,e^2\,e^{2\,\mathrm{i}\,c}\,\mathrm{ArcTan}\left[\frac{2\,a\,e^{\mathrm{i}\,(c+d\,x)}}{b\,\left(-1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)}\right]-$$

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

$$3\,d^2\,e^2\,e^{2\,\mathrm{i}\,c}\,\mathrm{Log}\left[4\,a^2\,e^{2\,\mathrm{i}\,(c+d\,x)}+b^2\,\left(-1+e^{2\,\mathrm{i}\,(c+d\,x)}\right)^2\right]-12\,d^2\,e\,f\,x$$

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

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

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

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

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

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

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

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

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

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

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

$$\frac{1}{b d^3}$$

$$\text{Cos}[d x]$$

$$\left(2 d e f \,\text{Cos}[c]+2 d f^2 x \,\text{Cos}[c]+d^2 e^2 \,\text{Sin}[c]-2 f^2 \,\text{Sin}[c]+2 d^2 e f x \,\text{Sin}[c]+d^2 f^2 x^2 \,\text{Sin}[c]\right)+$$

$$\left(e^2 \,\text{Csc}[c] \left(-d x \,\text{Cos}[c]+\text{Log}[\text{Cos}[d x] \,\text{Sin}[c]+\text{Cos}[c] \,\text{Sin}[d x]]\, \text{Sin}[c]\right)\right) \Big/$$

$$\left(a d \left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)-\frac{1}{b d^3}$$

$$\left(d^2 e^2 \,\text{Cos}[c]-2 f^2 \,\text{Cos}[c]+2 d^2 e f x \,\text{Cos}[c]+d^2 f^2 x^2 \,\text{Cos}[c]-2 d e f \,\text{Sin}[c]-2 d f^2 x \,\text{Sin}[c]\right)$$

$$\text{Sin}[d x]-$$

$$\left(e f \,\text{Csc}[c]\, \text{Sec}[c] \left(d^2 e^{i \,\text{ArcTan}[\text{Tan}[c]]} x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}} \left(i\, d x \left(-\pi+2 \,\text{ArcTan}[\text{Tan}[c]]\right)-\right.\right.\right.$$

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

$$\pi \,\text{Log}[\text{Cos}[d x]]+2 \,\text{ArcTan}[\text{Tan}[c]]\, \text{Log}[\text{Sin}[d x+\text{ArcTan}[\text{Tan}[c]]]]+$$

$$\left.\left.\left.i \,\text{PolyLog}\left[2, e^{2 i (d x+\text{ArcTan}[\text{Tan}[c]])}\right]\right) \text{Tan}[c]\right)\right) \Big/ \left(a d^2 \sqrt{\text{Sec}[c]^2 \left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)$$

Problem 331: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x) \operatorname{Cos}[c+d x]^2 \operatorname{Cot}[c+d x]}{a+b \operatorname{Sin}[c+d x]} \, dx$$

Optimal (type 4, 379 leaves, 22 steps):

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

Result (type 4, 868 leaves):

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

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

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

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

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

$$4\left(-2c+\pi-2dx\right)\text{Log}\left[a+b\,\text{Sin}[c+dx]\right]+8\left(c+dx\right)\text{Log}\left[a+b\,\text{Sin}[c+dx]\right]+$$

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

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

$$a\,b\,d\left(e+fx\right)\text{Sin}[c+dx]\Bigg)$$

Problem 333: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 1138 leaves, 53 steps):

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

Result (type 4, 3263 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(-\frac{i f^3 x^3 \text{Cos}[2 c]}{8 b d}-\frac{f^3 x^3 \text{Sin}[2 c]}{8 b d}+\left(-4 i d^3 e^3-6 d^2 e^2 f+6 i d e f^2+3 f^3\right)\right.$$
$$\left(\frac{\text{Cos}[2 c]}{32 b d^4}-\frac{i \text{Sin}[2 c]}{32 b d^4}\right)+\left(2 d^2 e^2 f-2 i d e f^2-f^3\right)\left(-\frac{3 i x \text{Cos}[2 c]}{16 b d^3}-\frac{3 x \text{Sin}[2 c]}{16 b d^3}\right)+$$
$$\left.\left(2 d e f^2-i f^3\right)\left(-\frac{3 i x^2 \text{Cos}[2 c]}{16 b d^2}-\frac{3 x^2 \text{Sin}[2 c]}{16 b d^2}\right)\right)\left(\text{Cos}[2 d x]-i \text{Sin}[2 d x]\right)+$$
$$\left(\frac{i f^3 x^3 \text{Cos}[2 c]}{8 b d}-\frac{f^3 x^3 \text{Sin}[2 c]}{8 b d}+\left(4 i d^3 e^3-6 d^2 e^2 f-6 i d e f^2+3 f^3\right)\left(\frac{\text{Cos}[2 c]}{32 b d^4}+\frac{i \text{Sin}[2 c]}{32 b d^4}\right)+\right.$$
$$\frac{1}{16 b d^2}3 i x^2\left(2 d e f^2 \text{Cos}[2 c]+i f^3 \text{Cos}[2 c]+2 i d e f^2 \text{Sin}[2 c]-f^3 \text{Sin}[2 c]\right)+$$
$$\frac{1}{16 b d^3}3 i x\left(2 d^2 e^2 f \text{Cos}[2 c]+2 i d e f^2 \text{Cos}[2 c]-f^3 \text{Cos}[2 c]+\right.$$
$$\left.\left.2 i d^2 e^2 f \text{Sin}[2 c]-2 d e f^2 \text{Sin}[2 c]-i f^3 \text{Sin}[2 c]\right)\right)\left(\text{Cos}[2 d x]+i \text{Sin}[2 d x]\right)$$

Problem 337: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 852 leaves, 48 steps):

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

Result (type 4, 3114 leaves):

$$\frac{3 e^2 f \text{Log}[\text{Tan}[\frac{1}{2} (c+d x)]]}{a d^2}+\frac{1}{a d^3}$$
$$6 e f^2 \Big((c+d x) (\text{Log}[1-e^{i (c+d x)}]-\text{Log}[1+e^{i (c+d x)}])-c \text{Log}[\text{Tan}[\frac{1}{2} (c+d x)]]+$$
$$i (\text{PolyLog}[2,-e^{i (c+d x)}]-\text{PolyLog}[2,e^{i (c+d x)}])\Big)+\frac{1}{4 a^2 d^3}$$
$$b e e^{-i c} f^2 \text{Csc}[c] \big(2 d^2 x^2 (2 d e^{2 i c} x+3 i (-1+e^{2 i c}) \text{Log}[1-e^{2 i (c+d x)}])+$$
$$6 d (-1+e^{2 i c}) x \text{PolyLog}[2,e^{2 i (c+d x)}]+3 i (-1+e^{2 i c}) \text{PolyLog}[3,e^{2 i (c+d x)}]\big)-\frac{1}{a d^4}$$
$$6 f^3 \big(d^2 x^2 \text{ArcTanh}[\text{Cos}[c+d x]+i \text{Sin}[c+d x]]-i d x \text{PolyLog}[2,-\text{Cos}[c+d x]-i \text{Sin}[c+d x]]+$$
$$i d x \text{PolyLog}[2,\text{Cos}[c+d x]+i \text{Sin}[c+d x]]+\text{PolyLog}[3,-\text{Cos}[c+d x]-i \text{Sin}[c+d x]]-$$
$$\text{PolyLog}[3,\text{Cos}[c+d x]+i \text{Sin}[c+d x]]\big)+\frac{1}{4 a^2}$$
$$b e^{i c} f^3 \text{Csc}[c] \Big(x^4+(-1+e^{-2 i c}) x^4+\frac{1}{2 d^4} e^{-2 i c} (-1+e^{2 i c}) \big(2 d^4 x^4+4 i d^3 x^3 \text{Log}[1-e^{2 i (c+d x)}]+$$
$$6 d^2 x^2 \text{PolyLog}[2,e^{2 i (c+d x)}]+6 i d x \text{PolyLog}[3,e^{2 i (c+d x)}]-3 \text{PolyLog}[4,e^{2 i (c+d x)}]\big)\Big)+$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$12\,i\,f^3\,\text{PolyLog}\left[4,\,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-12\,i\,e^{2\,i\,c}\,f^3$$

$$\text{PolyLog}\left[4,\,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+12\,i\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$\left.12\,i\,e^{2\,i\,c}\,f^3\,\text{PolyLog}\left[4,\,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]\right)+\frac{1}{8\,a\,b\,d}$$

$$\left(-4\,b\,e^3-12\,b\,e^2\,f\,x-12\,b\,e\,f^2\,x^2-4\,b\,f^3\,x^3-4\,a\,d\,e^3\,x\,\text{Cos}[c]-6\,a\,d\,e^2\,f\,x^2\,\text{Cos}[c]-\right.$$
$$\left.4\,a\,d\,e\,f^2\,x^3\,\text{Cos}[c]-a\,d\,f^3\,x^4\,\text{Cos}[c]\right)\,\text{Csc}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}\right]-$$

$$\left(b\,e^3\,\text{Csc}[c]\,\left(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]\right)\right)\Big/$$
$$\left(a^2\,d\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+$$

$$\frac{1}{2\,a\,d}\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(-e^3\,\text{Sin}\left[\frac{d\,x}{2}\right]-3\,e^2\,f\,x\,\text{Sin}\left[\frac{d\,x}{2}\right]-3\,e\,f^2\,x^2\,\text{Sin}\left[\frac{d\,x}{2}\right]-f^3\,x^3\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)+$$

$$\frac{1}{2\,a\,d}\text{Csc}\left[\frac{c}{2}\right]\,\text{Csc}\left[\frac{c}{2}+\frac{d\,x}{2}\right]$$
$$\left(e^3\,\text{Sin}\left[\frac{d\,x}{2}\right]+3\,e^2\,f\,x\,\text{Sin}\left[\frac{d\,x}{2}\right]+3\,e\,f^2\,x^2\,\text{Sin}\left[\frac{d\,x}{2}\right]+f^3\,x^3\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)+$$

$$\left(3\,b\,e^2\,f\,\text{Csc}[c]\,\text{Sec}[c]\,\left(d^2\,e^{i\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\left(i\,d\,x\,\left(-\pi+2\,\text{ArcTan}[\text{Tan}[c]]\right)-\right.\right.\right.$$
$$\pi\,\text{Log}\left[1+e^{-2\,i\,d\,x}\right]-2\,\left(d\,x+\text{ArcTan}[\text{Tan}[c]]\right)\,\text{Log}\left[1-e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right]+$$
$$\pi\,\text{Log}[\text{Cos}[d\,x]]+2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+$$
$$\left.\left.\left.i\,\text{PolyLog}\left[2,\,e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right]\right)\,\text{Tan}[c]\right)\right)\Big/\left(2\,a^2\,d^2\,\sqrt{\text{Sec}[c]^2\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)$$

Problem 338: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^2\,\text{Cos}[c+d\,x]\,\text{Cot}[c+d\,x]^2}{a+b\,\text{Sin}[c+d\,x]}\,dx$$

Optimal (type 4, 616 leaves, 37 steps):

$$\frac{i b (e+f x)^3}{3 a^2 f}+\frac{i (a^2-b^2) (e+f x)^3}{3 a^2 b f}-\frac{4 f (e+f x) \text{ArcTanh}[e^{i (c+d x)}]}{a d^2}-\frac{(e+f x)^2 \text{Csc}[c+d x]}{a d}-\frac{(a^2-b^2) (e+f x)^2 \text{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b d}-\frac{(a^2-b^2) (e+f x)^2 \text{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b d}-\frac{b (e+f x)^2 \text{Log}[1-e^{2 i (c+d x)}]}{a^2 d}+\frac{2 i f^2 \text{PolyLog}[2,-e^{i (c+d x)}]}{a d^3}-\frac{2 i f^2 \text{PolyLog}[2,e^{i (c+d x)}]}{a d^3}+\frac{2 i (a^2-b^2) f (e+f x) \text{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b d^2}+\frac{2 i (a^2-b^2) f (e+f x) \text{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b d^2}+\frac{i b f (e+f x) \text{PolyLog}[2,e^{2 i (c+d x)}]}{a^2 d^2}-\frac{2 (a^2-b^2) f^2 \text{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b d^3}-\frac{2 (a^2-b^2) f^2 \text{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b d^3}-\frac{b f^2 \text{PolyLog}[3,e^{2 i (c+d x)}]}{2 a^2 d^3}$$

Result (type 4, 1905 leaves):

$$\frac{2 e f \text{Log}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right]}{a d^2}+\frac{1}{a d^3} 2 f^2 \left((c+d x) \left(\text{Log}[1-e^{i (c+d x)}]-\text{Log}[1+e^{i (c+d x)}]\right)-c \text{Log}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right]+i \left(\text{PolyLog}[2,-e^{i (c+d x)}]-\text{PolyLog}[2,e^{i (c+d x)}]\right)\right)+\frac{1}{12 a^2 d^3} b e^{-i c} f^2 \text{Csc}[c] \left(2 d^2 x^2 \left(2 d e^{2 i c} x+3 i (-1+e^{2 i c}) \text{Log}[1-e^{2 i (c+d x)}]\right)+6 d (-1+e^{2 i c}) x \text{PolyLog}[2,e^{2 i (c+d x)}]+3 i (-1+e^{2 i c}) \text{PolyLog}[3,e^{2 i (c+d x)}]\right)+\frac{1}{6 a^2 b d^3 (-1+e^{2 i c})} (a^2-b^2) \left(12 i d^3 e^2 e^{2 i c} x+12 i d^3 e e^{2 i c} f x^2+4 i d^3 e^{2 i c} f^2 x^3+6 i d^2 e^2 \text{ArcTan}\left[\frac{2 a e^{i (c+d x)}}{b (-1+e^{2 i (c+d x)})}\right]-6 i d^2 e^2 e^{2 i c} \text{ArcTan}\left[\frac{2 a e^{i (c+d x)}}{b (-1+e^{2 i (c+d x)})}\right]+3 d^2 e^2 \text{Log}\left[4 a^2 e^{2 i (c+d x)}+b^2 (-1+e^{2 i (c+d x)})^2\right]-3 d^2 e^2 e^{2 i c} \text{Log}\left[4 a^2 e^{2 i (c+d x)}+b^2 (-1+e^{2 i (c+d x)})^2\right]+12 d^2 e f x \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{(-a^2+b^2) e^{2 i c}}}\right]-12 d^2 e e^{2 i c} f x \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{(-a^2+b^2) e^{2 i c}}}\right]+6 d^2 f^2 x^2 \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{(-a^2+b^2) e^{2 i c}}}\right]-6 d^2 e^{2 i c} f^2 x^2 \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}-\sqrt{(-a^2+b^2) e^{2 i c}}}\right]+12 d^2 e f x \text{Log}\left[1+\frac{b e^{i (2 c+d x)}}{i a e^{i c}+\sqrt{(-a^2+b^2) e^{2 i c}}}\right]-\right.$$

$$12\,d^2\,e\,e^{2\,i\,c}\,f\,x\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+6\,d^2\,f^2\,x^2$$

$$\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-6\,d^2\,e^{2\,i\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$12\,i\,d\,\left(-1+e^{2\,i\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$12\,i\,d\,\left(-1+e^{2\,i\,c}\right)\,f\,\left(e+f\,x\right)\,\text{PolyLog}\left[2,\,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$12\,f^2\,\text{PolyLog}\left[3,\,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-12\,e^{2\,i\,c}\,f^2$$

$$\text{PolyLog}\left[3,\,\frac{i\,b\,e^{i\,(2\,c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+12\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$\left.12\,e^{2\,i\,c}\,f^2\,\text{PolyLog}\left[3,\,-\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]\right)+\frac{1}{6\,a\,b\,d}$$

$$\left(-3\,b\,e^2-6\,b\,e\,f\,x-3\,b\,f^2\,x^2-3\,a\,d\,e^2\,x\,\text{Cos}[c]-3\,a\,d\,e\,f\,x^2\,\text{Cos}[c]-a\,d\,f^2\,x^3\,\text{Cos}[c]\right)$$

$$\text{Csc}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}\right]-$$

$$\left(b\,e^2\,\text{Csc}[c]\,\left(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]\right)\right)\Big/$$
$$\left(a^2\,d\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+$$

$$\frac{\text{Sec}\left[\frac{c}{2}\right]\,\text{Sec}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\,\left(-e^2\,\text{Sin}\left[\frac{d\,x}{2}\right]-2\,e\,f\,x\,\text{Sin}\left[\frac{d\,x}{2}\right]-f^2\,x^2\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)}{2\,a\,d}+$$

$$\frac{\text{Csc}\left[\frac{c}{2}\right]\,\text{Csc}\left[\frac{c}{2}+\frac{d\,x}{2}\right]\,\left(e^2\,\text{Sin}\left[\frac{d\,x}{2}\right]+2\,e\,f\,x\,\text{Sin}\left[\frac{d\,x}{2}\right]+f^2\,x^2\,\text{Sin}\left[\frac{d\,x}{2}\right]\right)}{2\,a\,d}+$$

$$\left(b\,e\,f\,\text{Csc}[c]\,\text{Sec}[c]\right.$$

$$\left(d^2\,e^{i\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\left(i\,d\,x\,\left(-\pi+2\,\text{ArcTan}[\text{Tan}[c]]\right)-\pi\,\text{Log}\left[1+e^{-2\,i\,d\,x}\right]-\right.\right.$$
$$2\,\left(d\,x+\text{ArcTan}[\text{Tan}[c]]\right)\,\text{Log}\left[1-e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right]+\pi\,\text{Log}[\text{Cos}[d\,x]]+$$
$$\left.2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+i\,\text{PolyLog}\left[2,\,e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\right]\right)$$

$$\left.\left.\text{Tan}[c]\right)\right)\Big/\left(a^2\,d^2\,\sqrt{\text{Sec}[c]^2\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)$$

Problem 339: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)\,\text{Cos}[c+d x]\,\text{Cot}[c+d x]^2}{a+b\,\text{Sin}[c+d x]}\,dx$$

Optimal (type 4, 386 leaves, 28 steps):

$$\frac{i b (e+f x)^2}{2 a^2 f}+\frac{i (a^2-b^2) (e+f x)^2}{2 a^2 b f}-\frac{f\,\text{ArcTanh}[\text{Cos}[c+d x]]}{a d^2}-\frac{(e+f x)\,\text{Csc}[c+d x]}{a d}-\frac{(a^2-b^2) (e+f x)\,\text{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b d}-\frac{(a^2-b^2) (e+f x)\,\text{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b d}-\frac{b (e+f x)\,\text{Log}\left[1-e^{2 i (c+d x)}\right]}{a^2 d}+\frac{i (a^2-b^2) f\,\text{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b d^2}+\frac{i (a^2-b^2) f\,\text{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b d^2}+\frac{i b f\,\text{PolyLog}\left[2,e^{2 i (c+d x)}\right]}{2 a^2 d^2}$$

Result (type 4, 1107 leaves):

$$\frac{1}{2 a d^2}\left(-d e\,\text{Cos}\left[\frac{1}{2} (c+d x)\right]+c f\,\text{Cos}\left[\frac{1}{2} (c+d x)\right]-f (c+d x)\,\text{Cos}\left[\frac{1}{2} (c+d x)\right]\right)\text{Csc}\left[\frac{1}{2} (c+d x)\right]-\frac{b e\,\text{Log}[\text{Sin}[c+d x]]}{a^2 d}+\frac{b c f\,\text{Log}[\text{Sin}[c+d x]]}{a^2 d^2}-\frac{e\,\text{Log}\left[1+\frac{b\,\text{Sin}[c+d x]}{a}\right]}{b d}+\frac{b e\,\text{Log}\left[1+\frac{b\,\text{Sin}[c+d x]}{a}\right]}{a^2 d}+\frac{c f\,\text{Log}\left[1+\frac{b\,\text{Sin}[c+d x]}{a}\right]}{b d^2}-\frac{b c f\,\text{Log}\left[1+\frac{b\,\text{Sin}[c+d x]}{a}\right]}{a^2 d^2}+\frac{f\,\text{Log}\left[\text{Tan}\left[\frac{1}{2} (c+d x)\right]\right]}{a d^2}-\frac{1}{d^2}f\left(\frac{(c+d x)\,\text{Log}[a+b\,\text{Sin}[c+d x]]}{b}-\frac{1}{b}\right.$$

$$\left(-\frac{1}{2} i \left(-c+\frac{\pi}{2}-d x\right)^2+4 i\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{a^2-b^2}}\right]+\right.$$

$$\left(-c+\frac{\pi}{2}-d x+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(a-\sqrt{a^2-b^2}\right) e^{i \left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]+$$

$$\left(-c+\frac{\pi}{2}-d x-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(a+\sqrt{a^2-b^2}\right) e^{i \left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]-$$

$$\left(-c+\frac{\pi}{2}-d\,x\right)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]-$$

$$\left.\left.\left.\mathrm{i}\,\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+\text{PolyLog}\left[2,-\frac{\left(a+\sqrt{a^2-b^2}\right)\,e^{\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]\right)\right)\right)\right)+$$

$$\frac{1}{a^2\,d^2}b^2\,f\left(\frac{(c+d\,x)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]}{b}-\frac{1}{b}\right.$$

$$\left(-\frac{1}{2}\,\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)^2+4\,\mathrm{i}\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{a^2-b^2}}\right]+\right.$$

$$\left(-c+\frac{\pi}{2}-d\,x+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+$$

$$\left(-c+\frac{\pi}{2}-d\,x-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\left(a+\sqrt{a^2-b^2}\right)\,e^{\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]-$$

$$\left(-c+\frac{\pi}{2}-d\,x\right)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]-$$

$$\left.\left.\left.\mathrm{i}\,\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+\text{PolyLog}\left[2,-\frac{\left(a+\sqrt{a^2-b^2}\right)\,e^{\mathrm{i}\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]\right)\right)\right)\right)-$$

$$\frac{1}{a^2\,d^2}b\,f\left((c+d\,x)\,\text{Log}\left[1-e^{2\,\mathrm{i}\,(c+d\,x)}\right]-\frac{1}{2}\,\mathrm{i}\,\left((c+d\,x)^2+\text{PolyLog}\left[2,e^{2\,\mathrm{i}\,(c+d\,x)}\right]\right)\right)+$$

$$\frac{1}{2\,a\,d^2}$$

$$\text{Sec}\left[\frac{1}{2}\,(c+d\,x)\right]$$

$$\left(-d\,e\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]+c\,f\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]-f\,(c+d\,x)\,\text{Sin}\left[\frac{1}{2}\,(c+d\,x)\right]\right)$$

Problem 341: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^3 \operatorname{Cos}[c+d x]^2 \operatorname{Cot}[c+d x]^2}{a+b \operatorname{Sin}[c+d x]} \, dx$$

Optimal (type 4, 1144 leaves, 66 steps):

$$-\frac{i (e+f x)^3}{a d}-\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{2 b (e+f x)^3 \operatorname{ArcTanh}\left[e^{i (c+d x)}\right]}{a^2 d}+\frac{6 b f^2 (e+f x) \operatorname{Cos}[c+d x]}{a^2 d^3}+\frac{6 \left(a^2-b^2\right) f^2 (e+f x) \operatorname{Cos}[c+d x]}{a^2 b d^3}-\frac{b (e+f x)^3 \operatorname{Cos}[c+d x]}{a^2 d}-\frac{\left(a^2-b^2\right) (e+f x)^3 \operatorname{Cos}[c+d x]}{a^2 b d}-\frac{(e+f x)^3 \operatorname{Cot}[c+d x]}{a d}-\frac{i \left(a^2-b^2\right)^{3/2} (e+f x)^3 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d}+\frac{i \left(a^2-b^2\right)^{3/2} (e+f x)^3 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d}+\frac{3 f (e+f x)^2 \operatorname{Log}\left[1-e^{2 i (c+d x)}\right]}{a d^2}-\frac{3 i b f (e+f x)^2 \operatorname{PolyLog}\left[2,-e^{i (c+d x)}\right]}{a^2 d^2}+\frac{3 i b f (e+f x)^2 \operatorname{PolyLog}\left[2, e^{i (c+d x)}\right]}{a^2 d^2}-\frac{3 \left(a^2-b^2\right)^{3/2} f (e+f x)^2 \operatorname{PolyLog}\left[2, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^2}+\frac{3 \left(a^2-b^2\right)^{3/2} f (e+f x)^2 \operatorname{PolyLog}\left[2, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^2}-\frac{3 i f^2 (e+f x) \operatorname{PolyLog}\left[2, e^{2 i (c+d x)}\right]}{a d^3}+\frac{6 b f^2 (e+f x) \operatorname{PolyLog}\left[3,-e^{i (c+d x)}\right]}{a^2 d^3}-\frac{6 b f^2 (e+f x) \operatorname{PolyLog}\left[3, e^{i (c+d x)}\right]}{a^2 d^3}-\frac{6 i \left(a^2-b^2\right)^{3/2} f^2 (e+f x) \operatorname{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^3}+\frac{6 i \left(a^2-b^2\right)^{3/2} f^2 (e+f x) \operatorname{PolyLog}\left[3, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^3}+\frac{3 f^3 \operatorname{PolyLog}\left[3, e^{2 i (c+d x)}\right]}{2 a d^4}+\frac{6 i b f^3 \operatorname{PolyLog}\left[4,-e^{i (c+d x)}\right]}{a^2 d^4}-\frac{6 i b f^3 \operatorname{PolyLog}\left[4, e^{i (c+d x)}\right]}{a^2 d^4}+\frac{6 \left(a^2-b^2\right)^{3/2} f^3 \operatorname{PolyLog}\left[4, \frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^4}-\frac{6 \left(a^2-b^2\right)^{3/2} f^3 \operatorname{PolyLog}\left[4, \frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^4}-\frac{6 b f^3 \operatorname{Sin}[c+d x]}{a^2 d^4}-\frac{6 \left(a^2-b^2\right) f^3 \operatorname{Sin}[c+d x]}{a^2 b d^4}+\frac{3 b f (e+f x)^2 \operatorname{Sin}[c+d x]}{a^2 d^2}+\frac{3 \left(a^2-b^2\right) f (e+f x)^2 \operatorname{Sin}[c+d x]}{a^2 b d^2}$$

Result (type 4, 4632 leaves):

$$-\frac{b\,e^3\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]}{a^2\,d}-\frac{1}{a^2\,d^2}$$

$$3\,b\,e^2\,f\left(\left(c+d\,x\right)\left(\text{Log}\left[1-e^{i\,(c+d\,x)}\right]-\text{Log}\left[1+e^{i\,(c+d\,x)}\right]\right)-c\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]+\right.$$

$$\left.i\left(\text{PolyLog}\left[2,-e^{i\,(c+d\,x)}\right]-\text{PolyLog}\left[2,e^{i\,(c+d\,x)}\right]\right)\right)-\frac{1}{4\,a\,d^4}$$

$$e^{-i\,c}\,f^3\,\text{Csc}[c]\left(2\,d^2\,x^2\left(2\,d\,e^{2\,i\,c}\,x+3\,i\left(-1+e^{2\,i\,c}\right)\text{Log}\left[1-e^{2\,i\,(c+d\,x)}\right]\right)+\right.$$

$$\left.6\,d\left(-1+e^{2\,i\,c}\right)x\,\text{PolyLog}\left[2,e^{2\,i\,(c+d\,x)}\right]+3\,i\left(-1+e^{2\,i\,c}\right)\text{PolyLog}\left[3,e^{2\,i\,(c+d\,x)}\right]\right)+\frac{1}{a^2\,d^3}6\,b\,e\,f^2$$

$$\left(d^2\,x^2\,\text{ArcTanh}[\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-i\,d\,x\,\text{PolyLog}[2,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+\right.$$

$$i\,d\,x\,\text{PolyLog}[2,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]+$$

$$\left.\text{PolyLog}[3,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]-\text{PolyLog}[3,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]\right)-$$

$$\frac{1}{a^2\,d^4}\,b\,f^3\left(-2\,d^3\,x^3\,\text{ArcTanh}[\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]+3\,i\,d^2\,x^2\,\text{PolyLog}[2,\right.$$

$$-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]-3\,i\,d^2\,x^2\,\text{PolyLog}[2,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-6\,d\,x$$

$$\text{PolyLog}[3,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+6\,d\,x\,\text{PolyLog}[3,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-$$

$$\left.6\,i\,\text{PolyLog}[4,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+6\,i\,\text{PolyLog}[4,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]\right)+$$

$$\left(3\,e^2\,f\,\text{Csc}[c]\left(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]\right)\right)\Big/$$

$$\left(a\,d^2\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+$$

$$\frac{1}{a^2\,b^2\,d^4\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}}\,i\left(a^2-b^2\right)^{3/2}$$

$$\left(3\,i\sqrt{a^2-b^2}\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]\right.$$

$$\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+3\,i\sqrt{a^2-b^2}\,d^3\,e\,f^2\,x^2$$

$$\text{Log}\left[1+\frac{b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+$$

$$i\sqrt{a^2-b^2}\,d^3\,f^3\,x^3\,\text{Log}\left[1+\frac{b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]$$

$$\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+3\sqrt{a^2-b^2}\,d^2\,f\left(e+f\,x\right)^2$$

$$\text{PolyLog}\left[2,-\frac{b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]$$

$$\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)-3\sqrt{a^2-b^2}\,d^2\,f\left(e+f\,x\right)^2\text{PolyLog}\left[2,\right.$$

$$\left.\frac{b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{-i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]}\right]\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+$$

$$6\,i\sqrt{a^2-b^2}\,d\,e\,f^2\,\text{PolyLog}\left[3,-\frac{b\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]$$

$$\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+6\,i\sqrt{a^2-b^2}\,d\,f^3\,x\,\text{PolyLog}\left[3,\right.$$

$$- \frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]\,(\text{Cos}[c]+i\,\text{Sin}[c]) -$$

$$6\sqrt{a^2-b^2}\,f^3\,\text{PolyLog}\Big[4,-\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}-a\,\text{Sin}[c]}\Big]$$

$$(\text{Cos}[c]+i\,\text{Sin}[c]) +$$

$$6\sqrt{a^2-b^2}\,f^3\,\text{PolyLog}\Big[4,\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

$$(\text{Cos}[c]+i\,\text{Sin}[c]) + 3\sqrt{a^2-b^2}\,d^3\,e^2\,f\,x$$

$$\text{Log}\Big[1-\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]\,(-i\,\text{Cos}[c]+\text{Sin}[c]) +$$

$$3\sqrt{a^2-b^2}\,d^3\,e\,f^2\,x^2\,\text{Log}\Big[1-\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

$$(-i\,\text{Cos}[c]+\text{Sin}[c]) + \sqrt{a^2-b^2}\,d^3\,f^3\,x^3$$

$$\text{Log}\Big[1-\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]\,(-i\,\text{Cos}[c]+\text{Sin}[c]) +$$

$$6\sqrt{a^2-b^2}\,d\,e\,f^2\,\text{PolyLog}\Big[3,\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]$$

$$(-i\,\text{Cos}[c]+\text{Sin}[c]) + 6\sqrt{a^2-b^2}\,d\,f^3\,x\,\text{PolyLog}\Big[3,$$

$$\frac{b\,(\text{Cos}[2c+dx]+i\,\text{Sin}[2c+dx])}{-i\,a\,\text{Cos}[c]+\sqrt{(-a^2+b^2)\,(\text{Cos}[c]+i\,\text{Sin}[c])^2}+a\,\text{Sin}[c]}\Big]\,(-i\,\text{Cos}[c]+\text{Sin}[c]) -$$

$$2\,i\,d^3\,e^3\,\text{ArcTan}\Big[\frac{b\,\text{Cos}[c+dx]+i\,(a+b\,\text{Sin}[c+dx])}{\sqrt{a^2-b^2}}\Big]\,\sqrt{(-a^2+b^2)\,(\text{Cos}[2c]+i\,\text{Sin}[2c])}\Bigg) +$$

$$\text{Csc}[c]\,\text{Csc}[c+dx]\,\left(\frac{\text{Cos}[c+dx]}{16\,a\,b^2\,d^4}-\frac{i\,\text{Sin}[c+dx]}{16\,a\,b^2\,d^4}\right)$$

$$\begin{aligned}
&(8\,i\,b^2 d^3 e^3 \text{Cos}[c] + 24\,i\,b^2 d^3 e^2 f x \text{Cos}[c] + 24\,i\,b^2 d^3 e f^2 x^2 \text{Cos}[c] +\\
&8\,i\,b^2 d^3 f^3 x^3 \text{Cos}[c] - 2 a b d^3 e^3 \text{Cos}[dx] + 18\,i\,a b d^2 e^2 f \text{Cos}[dx] + 12 a b d e f^2 \text{Cos}[dx] -\\
&36\,i\,a b f^3 \text{Cos}[dx] - 6 a b d^3 e^2 f x \text{Cos}[dx] + 36\,i\,a b d^2 e f^2 x \text{Cos}[dx] +\\
&12 a b d f^3 x \text{Cos}[dx] - 6 a b d^3 e f^2 x^2 \text{Cos}[dx] + 18\,i\,a b d^2 f^3 x^2 \text{Cos}[dx] -\\
&2 a b d^3 f^3 x^3 \text{Cos}[dx] + 2 a b d^3 e^3 \text{Cos}[2c+dx] - 18\,i\,a b d^2 e^2 f \text{Cos}[2c+dx] -\\
&12 a b d e f^2 \text{Cos}[2c+dx] + 36\,i\,a b f^3 \text{Cos}[2c+dx] + 6 a b d^3 e^2 f x \text{Cos}[2c+dx] -\\
&36\,i\,a b d^2 e f^2 x \text{Cos}[2c+dx] - 12 a b d f^3 x \text{Cos}[2c+dx] + 6 a b d^3 e f^2 x^2 \text{Cos}[2c+dx] -\\
&18\,i\,a b d^2 f^3 x^2 \text{Cos}[2c+dx] + 2 a b d^3 f^3 x^3 \text{Cos}[2c+dx] - 8\,i\,b^2 d^3 e^3 \text{Cos}[c+2dx] -\\
&4 a^2 d^4 e^3 x \text{Cos}[c+2dx] - 24\,i\,b^2 d^3 e^2 f x \text{Cos}[c+2dx] - 6 a^2 d^4 e^2 f x^2 \text{Cos}[c+2dx] -\\
&24\,i\,b^2 d^3 e f^2 x^2 \text{Cos}[c+2dx] - 4 a^2 d^4 e f^2 x^3 \text{Cos}[c+2dx] - 8\,i\,b^2 d^3 f^3 x^3 \text{Cos}[c+2dx] -\\
&a^2 d^4 f^3 x^4 \text{Cos}[c+2dx] + 4 a^2 d^4 e^3 x \text{Cos}[3c+2dx] + 6 a^2 d^4 e^2 f x^2 \text{Cos}[3c+2dx] +\\
&4 a^2 d^4 e f^2 x^3 \text{Cos}[3c+2dx] + a^2 d^4 f^3 x^4 \text{Cos}[3c+2dx] - 2 a b d^3 e^3 \text{Cos}[2c+3dx] -\\
&6\,i\,a b d^2 e^2 f \text{Cos}[2c+3dx] + 12 a b d e f^2 \text{Cos}[2c+3dx] + 12\,i\,a b f^3 \text{Cos}[2c+3dx] -\\
&6 a b d^3 e^2 f x \text{Cos}[2c+3dx] - 12\,i\,a b d^2 e f^2 x \text{Cos}[2c+3dx] +
\end{aligned}$$

$12\,a\,b\,d\,f^3\,x\,\text{Cos}[2\,c+3\,d\,x]-6\,a\,b\,d^3\,e\,f^2\,x^2\,\text{Cos}[2\,c+3\,d\,x]-6\,i\,a\,b\,d^2\,f^3\,x^2\,\text{Cos}[2\,c+3\,d\,x]-$
$2\,a\,b\,d^3\,f^3\,x^3\,\text{Cos}[2\,c+3\,d\,x]+2\,a\,b\,d^3\,e^3\,\text{Cos}[4\,c+3\,d\,x]+6\,i\,a\,b\,d^2\,e^2\,f\,\text{Cos}[4\,c+3\,d\,x]-$
$12\,a\,b\,d\,e\,f^2\,\text{Cos}[4\,c+3\,d\,x]-12\,i\,a\,b\,f^3\,\text{Cos}[4\,c+3\,d\,x]+6\,a\,b\,d^3\,e^2\,f\,x\,\text{Cos}[4\,c+3\,d\,x]+$
$12\,i\,a\,b\,d^2\,e\,f^2\,x\,\text{Cos}[4\,c+3\,d\,x]-12\,a\,b\,d\,f^3\,x\,\text{Cos}[4\,c+3\,d\,x]+6\,a\,b\,d^3\,e\,f^2\,x^2\,\text{Cos}[4\,c+3\,d\,x]+$
$6\,i\,a\,b\,d^2\,f^3\,x^2\,\text{Cos}[4\,c+3\,d\,x]+2\,a\,b\,d^3\,f^3\,x^3\,\text{Cos}[4\,c+3\,d\,x]-8\,b^2\,d^3\,e^3\,\text{Sin}[c]-$
$8\,i\,a^2\,d^4\,e^3\,x\,\text{Sin}[c]-24\,b^2\,d^3\,e^2\,f\,x\,\text{Sin}[c]-12\,i\,a^2\,d^4\,e^2\,f\,x^2\,\text{Sin}[c]-$
$24\,b^2\,d^3\,e\,f^2\,x^2\,\text{Sin}[c]-8\,i\,a^2\,d^4\,e\,f^2\,x^3\,\text{Sin}[c]-8\,b^2\,d^3\,f^3\,x^3\,\text{Sin}[c]-2\,i\,a^2\,d^4\,f^3\,x^4\,\text{Sin}[c]+$
$2\,i\,a\,b\,d^3\,e^3\,\text{Sin}[d\,x]-6\,a\,b\,d^2\,e^2\,f\,\text{Sin}[d\,x]-12\,i\,a\,b\,d\,e\,f^2\,\text{Sin}[d\,x]+12\,a\,b\,f^3\,\text{Sin}[d\,x]+$
$6\,i\,a\,b\,d^3\,e^2\,f\,x\,\text{Sin}[d\,x]-12\,a\,b\,d^2\,e\,f^2\,x\,\text{Sin}[d\,x]-12\,i\,a\,b\,d\,f^3\,x\,\text{Sin}[d\,x]+$
$6\,i\,a\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[d\,x]-6\,a\,b\,d^2\,f^3\,x^2\,\text{Sin}[d\,x]+2\,i\,a\,b\,d^3\,f^3\,x^3\,\text{Sin}[d\,x]-$
$2\,i\,a\,b\,d^3\,e^3\,\text{Sin}[2\,c+d\,x]+6\,a\,b\,d^2\,e^2\,f\,\text{Sin}[2\,c+d\,x]+12\,i\,a\,b\,d\,e\,f^2\,\text{Sin}[2\,c+d\,x]-$
$12\,a\,b\,f^3\,\text{Sin}[2\,c+d\,x]-6\,i\,a\,b\,d^3\,e^2\,f\,x\,\text{Sin}[2\,c+d\,x]+12\,a\,b\,d^2\,e\,f^2\,x\,\text{Sin}[2\,c+d\,x]+$
$12\,i\,a\,b\,d\,f^3\,x\,\text{Sin}[2\,c+d\,x]-6\,i\,a\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[2\,c+d\,x]+6\,a\,b\,d^2\,f^3\,x^2\,\text{Sin}[2\,c+d\,x]-$
$2\,i\,a\,b\,d^3\,f^3\,x^3\,\text{Sin}[2\,c+d\,x]+8\,b^2\,d^3\,e^3\,\text{Sin}[c+2\,d\,x]-4\,i\,a^2\,d^4\,e^3\,x\,\text{Sin}[c+2\,d\,x]+$
$24\,b^2\,d^3\,e^2\,f\,x\,\text{Sin}[c+2\,d\,x]-6\,i\,a^2\,d^4\,e^2\,f\,x^2\,\text{Sin}[c+2\,d\,x]+24\,b^2\,d^3\,e\,f^2\,x^2\,\text{Sin}[c+2\,d\,x]-$
$4\,i\,a^2\,d^4\,e\,f^2\,x^3\,\text{Sin}[c+2\,d\,x]+8\,b^2\,d^3\,f^3\,x^3\,\text{Sin}[c+2\,d\,x]-i\,a^2\,d^4\,f^3\,x^4\,\text{Sin}[c+2\,d\,x]+$
$4\,i\,a^2\,d^4\,e^3\,x\,\text{Sin}[3\,c+2\,d\,x]+6\,i\,a^2\,d^4\,e^2\,f\,x^2\,\text{Sin}[3\,c+2\,d\,x]+4\,i\,a^2\,d^4\,e\,f^2\,x^3\,\text{Sin}[3\,c+2\,d\,x]+$
$i\,a^2\,d^4\,f^3\,x^4\,\text{Sin}[3\,c+2\,d\,x]-2\,i\,a\,b\,d^3\,e^3\,\text{Sin}[2\,c+3\,d\,x]+6\,a\,b\,d^2\,e^2\,f\,\text{Sin}[2\,c+3\,d\,x]+$
$12\,i\,a\,b\,d\,e\,f^2\,\text{Sin}[2\,c+3\,d\,x]-12\,a\,b\,f^3\,\text{Sin}[2\,c+3\,d\,x]-6\,i\,a\,b\,d^3\,e^2\,f\,x\,\text{Sin}[2\,c+3\,d\,x]+$
$12\,a\,b\,d^2\,e\,f^2\,x\,\text{Sin}[2\,c+3\,d\,x]+12\,i\,a\,b\,d\,f^3\,x\,\text{Sin}[2\,c+3\,d\,x]-6\,i\,a\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[2\,c+3\,d\,x]+$
$6\,a\,b\,d^2\,f^3\,x^2\,\text{Sin}[2\,c+3\,d\,x]-2\,i\,a\,b\,d^3\,f^3\,x^3\,\text{Sin}[2\,c+3\,d\,x]+2\,i\,a\,b\,d^3\,e^3\,\text{Sin}[4\,c+3\,d\,x]-$
$6\,a\,b\,d^2\,e^2\,f\,\text{Sin}[4\,c+3\,d\,x]-12\,i\,a\,b\,d\,e\,f^2\,\text{Sin}[4\,c+3\,d\,x]+12\,a\,b\,f^3\,\text{Sin}[4\,c+3\,d\,x]+$
$6\,i\,a\,b\,d^3\,e^2\,f\,x\,\text{Sin}[4\,c+3\,d\,x]-12\,a\,b\,d^2\,e\,f^2\,x\,\text{Sin}[4\,c+3\,d\,x]-12\,i\,a\,b\,d\,f^3\,x\,\text{Sin}[4\,c+3\,d\,x]+$
$6\,i\,a\,b\,d^3\,e\,f^2\,x^2\,\text{Sin}[4\,c+3\,d\,x]-6\,a\,b\,d^2\,f^3\,x^2\,\text{Sin}[4\,c+3\,d\,x]+2\,i\,a\,b\,d^3\,f^3\,x^3\,\text{Sin}[4\,c+3\,d\,x]\Big)-$

$$\Bigg(3\,e\,f^2\,\text{Csc}[c]\,\text{Sec}[c]\,\Bigg(d^2\,e^{i\,\text{ArcTan}[\text{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\text{Tan}[c]^2}}\Big(i\,d\,x\,\big(-\pi+2\,\text{ArcTan}[\text{Tan}[c]]\big)-$$
$$\pi\,\text{Log}\big[1+e^{-2\,i\,d\,x}\big]-2\,\big(d\,x+\text{ArcTan}[\text{Tan}[c]]\big)\,\text{Log}\big[1-e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\big]+$$
$$\pi\,\text{Log}[\text{Cos}[d\,x]]+2\,\text{ArcTan}[\text{Tan}[c]]\,\text{Log}[\text{Sin}[d\,x+\text{ArcTan}[\text{Tan}[c]]]]+$$
$$i\,\text{PolyLog}\big[2,\,e^{2\,i\,(d\,x+\text{ArcTan}[\text{Tan}[c]])}\big]\Big)\,\text{Tan}[c]\Bigg)\Bigg)\Bigg/\left(a\,d^3\,\sqrt{\text{Sec}[c]^2\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)}\right)$$

Problem 342: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f\,x)^2\,\text{Cos}[c+d\,x]^2\,\text{Cot}[c+d\,x]^2}{a+b\,\text{Sin}[c+d\,x]}\,dx$$

Optimal (type 4, 840 leaves, 53 steps):

$$-\frac{i\,(e+f x)^2}{a d}-\frac{(e+f x)^3}{3 a f}-\frac{(a^2-b^2)\,(e+f x)^3}{3 a b^2 f}+$$

$$\frac{2 b\,(e+f x)^2\,\text{ArcTanh}\left[e^{i\,(c+d x)}\right]}{a^2 d}+\frac{2 b f^2 \text{Cos}[c+d x]}{a^2 d^3}+\frac{2\,(a^2-b^2)\,f^2 \text{Cos}[c+d x]}{a^2 b d^3}-$$

$$\frac{b\,(e+f x)^2 \text{Cos}[c+d x]}{a^2 d}-\frac{(a^2-b^2)\,(e+f x)^2 \text{Cos}[c+d x]}{a^2 b d}-\frac{(e+f x)^2 \text{Cot}[c+d x]}{a d}-$$

$$\frac{i\,(a^2-b^2)^{3/2}\,(e+f x)^2 \text{Log}\left[1-\frac{i b e^{i\,(c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d}+\frac{i\,(a^2-b^2)^{3/2}\,(e+f x)^2 \text{Log}\left[1-\frac{i b e^{i\,(c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d}+$$

$$\frac{2 f\,(e+f x)\,\text{Log}\left[1-e^{2 i\,(c+d x)}\right]}{a d^2}-\frac{2 i b f\,(e+f x)\,\text{PolyLog}\left[2,-e^{i\,(c+d x)}\right]}{a^2 d^2}+$$

$$\frac{2 i b f\,(e+f x)\,\text{PolyLog}\left[2,e^{i\,(c+d x)}\right]}{a^2 d^2}-\frac{2\,(a^2-b^2)^{3/2} f\,(e+f x)\,\text{PolyLog}\left[2,\frac{i b e^{i\,(c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^2}+$$

$$\frac{2\,(a^2-b^2)^{3/2} f\,(e+f x)\,\text{PolyLog}\left[2,\frac{i b e^{i\,(c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^2}-\frac{i f^2 \text{PolyLog}\left[2,e^{2 i\,(c+d x)}\right]}{a d^3}+$$

$$\frac{2 b f^2 \text{PolyLog}\left[3,-e^{i\,(c+d x)}\right]}{a^2 d^3}-\frac{2 b f^2 \text{PolyLog}\left[3,e^{i\,(c+d x)}\right]}{a^2 d^3}-$$

$$\frac{2 i\,(a^2-b^2)^{3/2} f^2 \text{PolyLog}\left[3,\frac{i b e^{i\,(c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^3}+\frac{2 i\,(a^2-b^2)^{3/2} f^2 \text{PolyLog}\left[3,\frac{i b e^{i\,(c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^2 d^3}+$$

$$\frac{2 b f\,(e+f x)\,\text{Sin}[c+d x]}{a^2 d^2}+\frac{2\,(a^2-b^2)\,f\,(e+f x)\,\text{Sin}[c+d x]}{a^2 b d^2}$$

Result (type 4, 2574 leaves):

$$-\frac{b e^2 \text{Log}\left[\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]\right]}{a^2 d}-\frac{1}{a^2 d^2}$$

$$2 b e f\left(\left(c+d x\right)\left(\text{Log}\left[1-e^{i\,(c+d x)}\right]-\text{Log}\left[1+e^{i\,(c+d x)}\right]\right)-c\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}\,(c+d x)\right]\right]+\right.$$

$$\left.i\left(\text{PolyLog}\left[2,-e^{i\,(c+d x)}\right]-\text{PolyLog}\left[2,e^{i\,(c+d x)}\right]\right)\right)+\frac{1}{a^2 d^3}2 b f^2$$

$$\left(d^2 x^2 \text{ArcTanh}[\text{Cos}[c+d x]+i\,\text{Sin}[c+d x]]-i\,d x\,\text{PolyLog}[2,-\text{Cos}[c+d x]-i\,\text{Sin}[c+d x]]+\right.$$

$$i\,d x\,\text{PolyLog}[2,\text{Cos}[c+d x]+i\,\text{Sin}[c+d x]]+$$

$$\left.\text{PolyLog}[3,-\text{Cos}[c+d x]-i\,\text{Sin}[c+d x]]-\text{PolyLog}[3,\text{Cos}[c+d x]+i\,\text{Sin}[c+d x]]\right)+$$

$$\left(2 e f\,\text{Csc}[c]\,\left(-d x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d x]]\,\text{Sin}[c]\right)\right)\Big/$$

$$\left(a d^2\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)+$$

$$\frac{1}{a^2 b^2 d^3\sqrt{\left(-a^2+b^2\right)\,\left(\text{Cos}[2 c]+i\,\text{Sin}[2 c]\right)}}\;i\,\left(a^2-b^2\right)^{3/2}\left(2\sqrt{a^2-b^2}\;d f\,(e+f x)\right.$$

$$\text{PolyLog}\left[2,-\frac{b\left(\text{Cos}[2 c+d x]+i\,\text{Sin}[2 c+d x]\right)}{i a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\,\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]}\right]$$

$$\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)-2\sqrt{a^2-b^2}\;d\,f\,(e+f\,x)\;\text{PolyLog}\Big[2,$$

$$\frac{b\,\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)}{-i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]}\Big]\;\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)-$$

$$i\,\Bigg(-2\sqrt{a^2-b^2}\;f^2\,\text{PolyLog}\Big[3,-\Big(\Big(b\,\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\Big)\Big/$$

$$\Big(i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]\Big)\Big)\Big]\;\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+$$

$$2\sqrt{a^2-b^2}\;f^2\,\text{PolyLog}\Big[3,\Big(b\,\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\Big)\Big/$$

$$\Big(-i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\Big)\Big]\;\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+$$

$$d^2\,\Bigg(\sqrt{a^2-b^2}\;f\,x\,(2\,e+f\,x)\;\Big(-\text{Log}\Big[1+\Big(b\,\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\Big)\Big/$$

$$\Big(i\,a\,\text{Cos}[c]+\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}-a\,\text{Sin}[c]\Big)\Big]+$$

$$\text{Log}\Big[1-\Big(b\,\left(\text{Cos}[2\,c+d\,x]+i\,\text{Sin}[2\,c+d\,x]\right)\Big)\Big/\Big(-i\,a\,\text{Cos}[c]+$$

$$\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)^2}+a\,\text{Sin}[c]\Big)\Big]\Big)$$

$$\left(\text{Cos}[c]+i\,\text{Sin}[c]\right)+2\,e^2\,\text{ArcTan}\Big[\frac{b\,\text{Cos}[c+d\,x]+i\,\left(a+b\,\text{Sin}[c+d\,x]\right)}{\sqrt{a^2-b^2}}\Big]$$

$$\sqrt{\left(-a^2+b^2\right)\left(\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}\Bigg)\Bigg)\Bigg)+$$

$$\text{Csc}[c]\;\text{Csc}[c+d\,x]\;\left(\frac{\text{Cos}[c+d\,x]}{24\,a\,b^2\,d^3}-\frac{i\,\text{Sin}[c+d\,x]}{24\,a\,b^2\,d^3}\right)$$

$$\Big(12\,i\,b^2\,d^2\,e^2\,\text{Cos}[c]+$$
$$24\,i\,b^2\,d^2\,e\,f\,x\,\text{Cos}[c]+$$
$$12\,i\,b^2\,d^2\,f^2\,x^2\,\text{Cos}[c]-$$
$$3\,a\,b\,d^2\,e^2\,\text{Cos}[d\,x]+$$
$$18\,i\,a\,b\,d\,e\,f\,\text{Cos}[d\,x]+$$
$$6\,a\,b\,f^2\,\text{Cos}[d\,x]-$$
$$6\,a\,b\,d^2\,e\,f\,x\,\text{Cos}[d\,x]+$$
$$18\,i\,a\,b\,d\,f^2\,x\,\text{Cos}[d\,x]-$$
$$3\,a\,b\,d^2\,f^2\,x^2\,\text{Cos}[d\,x]+$$
$$3\,a\,b\,d^2\,e^2\,\text{Cos}[2\,c+d\,x]-$$
$$18\,i\,a\,b\,d\,e\,f\,\text{Cos}[2\,c+d\,x]-$$
$$6\,a\,b\,f^2\,\text{Cos}[2\,c+d\,x]+6\,a\,b\,d^2\,e\,f\,x\,\text{Cos}[2\,c+d\,x]-$$
$$18\,i\,a\,b\,d\,f^2\,x\,\text{Cos}[2\,c+d\,x]+$$
$$3\,a\,b\,d^2\,f^2\,x^2\,\text{Cos}[2\,c+d\,x]-12\,i\,b^2\,d^2\,e^2\,\text{Cos}[c+2\,d\,x]-$$
$$6\,a^2\,d^3\,e^2\,x\,\text{Cos}[c+2\,d\,x]-24\,i\,b^2\,d^2\,e\,f\,x\,\text{Cos}[c+2\,d\,x]-$$
$$6\,a^2\,d^3\,e\,f\,x^2\,\text{Cos}[c+2\,d\,x]-12\,i\,b^2\,d^2\,f^2\,x^2\,\text{Cos}[c+2\,d\,x]-$$
$$2\,a^2\,d^3\,f^2\,x^3\,\text{Cos}[c+2\,d\,x]+6\,a^2\,d^3\,e^2\,x\,\text{Cos}[3\,c+2\,d\,x]+$$
$$6\,a^2\,d^3\,e\,f\,x^2\,\text{Cos}[3\,c+2\,d\,x]+2\,a^2\,d^3\,f^2\,x^3\,\text{Cos}[3\,c+2\,d\,x]-$$
$$3\,a\,b\,d^2\,e^2\,\text{Cos}[2\,c+3\,d\,x]-6\,i\,a\,b\,d\,e\,f\,\text{Cos}[2\,c+3\,d\,x]+$$
$$6\,a\,b\,f^2\,\text{Cos}[2\,c+3\,d\,x]-6\,a\,b\,d^2\,e\,f\,x\,\text{Cos}[2\,c+3\,d\,x]-$$
$$6\,i\,a\,b\,d\,f^2\,x\,\text{Cos}[2\,c+3\,d\,x]-3\,a\,b\,d^2\,f^2\,x^2\,\text{Cos}[2\,c+3\,d\,x]+$$

$3 a b d^2 e^2 \text{Cos}[4 c + 3 d x] + 6 i a b d e f \text{Cos}[4 c + 3 d x] -$
$6 a b f^2 \text{Cos}[4 c + 3 d x] + 6 a b d^2 e f x \text{Cos}[4 c + 3 d x] +$
$6 i a b d f^2 x \text{Cos}[4 c + 3 d x] + 3 a b d^2 f^2 x^2 \text{Cos}[4 c + 3 d x] -$
$12 b^2 d^2 e^2 \text{Sin}[c] - 12 i a^2 d^3 e^2 x \text{Sin}[c] - 24 b^2 d^2 e f x \text{Sin}[c] -$
$12 i a^2 d^3 e f x^2 \text{Sin}[c] - 12 b^2 d^2 f^2 x^2 \text{Sin}[c] -$
$4 i a^2 d^3 f^2 x^3 \text{Sin}[c] + 3 i a b d^2 e^2 \text{Sin}[d x] - 6 a b d e f \text{Sin}[d x] -$
$6 i a b f^2 \text{Sin}[d x] + 6 i a b d^2 e f x \text{Sin}[d x] - 6 a b d f^2 x \text{Sin}[d x] +$
$3 i a b d^2 f^2 x^2 \text{Sin}[d x] - 3 i a b d^2 e^2 \text{Sin}[2 c + d x] +$
$6 a b d e f \text{Sin}[2 c + d x] + 6 i a b f^2 \text{Sin}[2 c + d x] -$
$6 i a b d^2 e f x \text{Sin}[2 c + d x] + 6 a b d f^2 x \text{Sin}[2 c + d x] -$
$3 i a b d^2 f^2 x^2 \text{Sin}[2 c + d x] + 12 b^2 d^2 e^2 \text{Sin}[c + 2 d x] -$
$6 i a^2 d^3 e^2 x \text{Sin}[c + 2 d x] + 24 b^2 d^2 e f x \text{Sin}[c + 2 d x] -$
$6 i a^2 d^3 e f x^2 \text{Sin}[c + 2 d x] + 12 b^2 d^2 f^2 x^2 \text{Sin}[c + 2 d x] -$
$2 i a^2 d^3 f^2 x^3 \text{Sin}[c + 2 d x] + 6 i a^2 d^3 e^2 x \text{Sin}[3 c + 2 d x] +$
$6 i a^2 d^3 e f x^2 \text{Sin}[3 c + 2 d x] + 2 i a^2 d^3 f^2 x^3 \text{Sin}[3 c + 2 d x] -$
$3 i a b d^2 e^2 \text{Sin}[2 c + 3 d x] + 6 a b d e f \text{Sin}[2 c + 3 d x] +$
$6 i a b f^2 \text{Sin}[2 c + 3 d x] - 6 i a b d^2 e f x \text{Sin}[2 c + 3 d x] +$
$6 a b d f^2 x \text{Sin}[2 c + 3 d x] - 3 i a b d^2 f^2 x^2 \text{Sin}[2 c + 3 d x] +$
$3 i a b d^2 e^2 \text{Sin}[4 c + 3 d x] - 6 a b d e f \text{Sin}[4 c + 3 d x] -$
$6 i a b f^2 \text{Sin}[4 c + 3 d x] + 6 i a b d^2 e f x \text{Sin}[4 c + 3 d x] -$
$6 a b d f^2 x \text{Sin}[4 c + 3 d x] + 3 i a b d^2 f^2 x^2 \text{Sin}[4 c + 3 d x]\Big) -$

$$\left(f^2 \text{Csc}[c] \text{Sec}[c] \left(d^2 e^{i \text{ArcTan}[\text{Tan}[c]]} x^2 + \frac{1}{\sqrt{1+\text{Tan}[c]^2}} \left(i d x \left(-\pi + 2 \text{ArcTan}[\text{Tan}[c]]\right) - \pi \text{Log}\left[1+e^{-2 i d x}\right] - 2 \left(d x + \text{ArcTan}[\text{Tan}[c]]\right) \text{Log}\left[1 - e^{2 i (d x + \text{ArcTan}[\text{Tan}[c]])}\right] + \pi \text{Log}[\text{Cos}[d x]] + 2 \text{ArcTan}[\text{Tan}[c]] \text{Log}[\text{Sin}[d x + \text{ArcTan}[\text{Tan}[c]]]] + i \text{PolyLog}\left[2, e^{2 i (d x + \text{ArcTan}[\text{Tan}[c]])}\right]\right) \text{Tan}[c]\right)\right) \Big/ \left(a d^3 \sqrt{\text{Sec}[c]^2 \left(\text{Cos}[c]^2 + \text{Sin}[c]^2\right)}\right)$$

Problem 345: Result more than twice size of optimal antiderivative.

$$\int \frac{(e + f x)^3 \text{Cos}[c + d x]^3 \text{Cot}[c + d x]^2}{a + b \text{Sin}[c + d x]} \, dx$$

Optimal (type 4, 1432 leaves, 85 steps):

$$\frac{3\,b\,f^3\,x}{8\,a^2\,d^3}+\frac{3\,(a^2-b^2)\,f^3\,x}{8\,a^2\,b\,d^3}-\frac{b\,(e+f\,x)^3}{4\,a^2\,d}-\frac{(a^2-b^2)\,(e+f\,x)^3}{4\,a^2\,b\,d}+\frac{i\,b\,(e+f\,x)^4}{4\,a^2\,f}-$$
$$\frac{i\,(a^2-b^2)^2\,(e+f\,x)^4}{4\,a^2\,b^3\,f}-\frac{6\,f\,(e+f\,x)^2\,\text{ArcTanh}\left[e^{i\,(c+d\,x)}\right]}{a\,d^2}+\frac{6\,f^3\,\text{Cos}[c+d\,x]}{a\,d^4}+$$
$$\frac{6\,(a^2-b^2)\,f^3\,\text{Cos}[c+d\,x]}{a\,b^2\,d^4}-\frac{3\,f\,(e+f\,x)^2\,\text{Cos}[c+d\,x]}{a\,d^2}-\frac{3\,(a^2-b^2)\,f\,(e+f\,x)^2\,\text{Cos}[c+d\,x]}{a\,b^2\,d^2}-$$
$$\frac{(e+f\,x)^3\,\text{Csc}[c+d\,x]}{a\,d}+\frac{(a^2-b^2)^2\,(e+f\,x)^3\,\text{Log}\left[1-\frac{i\,b\,e^{i\,(c+d\,x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d}+$$
$$\frac{(a^2-b^2)^2\,(e+f\,x)^3\,\text{Log}\left[1-\frac{i\,b\,e^{i\,(c+d\,x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d}-\frac{b\,(e+f\,x)^3\,\text{Log}\left[1-e^{2\,i\,(c+d\,x)}\right]}{a^2\,d}+$$
$$\frac{6\,i\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,-e^{i\,(c+d\,x)}\right]}{a\,d^3}-\frac{6\,i\,f^2\,(e+f\,x)\,\text{PolyLog}\left[2,e^{i\,(c+d\,x)}\right]}{a\,d^3}-$$
$$\frac{3\,i\,(a^2-b^2)^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\frac{i\,b\,e^{i\,(c+d\,x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^2}-\frac{3\,i\,(a^2-b^2)^2\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,\frac{i\,b\,e^{i\,(c+d\,x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^2}+$$
$$\frac{3\,i\,b\,f\,(e+f\,x)^2\,\text{PolyLog}\left[2,e^{2\,i\,(c+d\,x)}\right]}{2\,a^2\,d^2}-\frac{6\,f^3\,\text{PolyLog}\left[3,-e^{i\,(c+d\,x)}\right]}{a\,d^4}+$$
$$\frac{6\,f^3\,\text{PolyLog}\left[3,e^{i\,(c+d\,x)}\right]}{a\,d^4}+\frac{6\,(a^2-b^2)^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(c+d\,x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^3}+$$
$$\frac{6\,(a^2-b^2)^2\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(c+d\,x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^3}-\frac{3\,b\,f^2\,(e+f\,x)\,\text{PolyLog}\left[3,e^{2\,i\,(c+d\,x)}\right]}{2\,a^2\,d^3}+$$
$$\frac{6\,i\,(a^2-b^2)^2\,f^3\,\text{PolyLog}\left[4,\frac{i\,b\,e^{i\,(c+d\,x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^4}+\frac{6\,i\,(a^2-b^2)^2\,f^3\,\text{PolyLog}\left[4,\frac{i\,b\,e^{i\,(c+d\,x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^4}-$$
$$\frac{3\,i\,b\,f^3\,\text{PolyLog}\left[4,e^{2\,i\,(c+d\,x)}\right]}{4\,a^2\,d^4}+\frac{6\,f^2\,(e+f\,x)\,\text{Sin}[c+d\,x]}{a\,d^3}+\frac{6\,(a^2-b^2)\,f^2\,(e+f\,x)\,\text{Sin}[c+d\,x]}{a\,b^2\,d^3}-$$
$$\frac{(e+f\,x)^3\,\text{Sin}[c+d\,x]}{a\,d}-\frac{(a^2-b^2)\,(e+f\,x)^3\,\text{Sin}[c+d\,x]}{a\,b^2\,d}-\frac{3\,b\,f^3\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{8\,a^2\,d^4}-$$
$$\frac{3\,(a^2-b^2)\,f^3\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{8\,a^2\,b\,d^4}+\frac{3\,b\,f\,(e+f\,x)^2\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{4\,a^2\,d^2}+$$
$$\frac{3\,(a^2-b^2)\,f\,(e+f\,x)^2\,\text{Cos}[c+d\,x]\,\text{Sin}[c+d\,x]}{4\,a^2\,b\,d^2}-\frac{3\,b\,f^2\,(e+f\,x)\,\text{Sin}[c+d\,x]^2}{4\,a^2\,d^3}-$$
$$\frac{3\,(a^2-b^2)\,f^2\,(e+f\,x)\,\text{Sin}[c+d\,x]^2}{4\,a^2\,b\,d^3}+\frac{b\,(e+f\,x)^3\,\text{Sin}[c+d\,x]^2}{2\,a^2\,d}+\frac{(a^2-b^2)\,(e+f\,x)^3\,\text{Sin}[c+d\,x]^2}{2\,a^2\,b\,d}$$

Result (type 4, 4084 leaves):

$$\frac{(-e^3-3\,e^2\,f\,x-3\,e\,f^2\,x^2-f^3\,x^3)\,\text{Csc}[c+d\,x]}{a\,d}+\frac{3\,e^2\,f\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a\,d^2}+$$

$$\frac{1}{a\,d^3}6\,e\,f^2\left(\left(c+d\,x\right)\left(\text{Log}\left[1-e^{i\,(c+d\,x)}\right]-\text{Log}\left[1+e^{i\,(c+d\,x)}\right]\right)-c\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right]+i\left(\text{PolyLog}\left[2,-e^{i\,(c+d\,x)}\right]-\text{PolyLog}\left[2,e^{i\,(c+d\,x)}\right]\right)\right)+$$

$$\frac{1}{4\,a^2\,d^3}b\,e\,e^{-i\,c}\,f^2\,\text{Csc}[c]\left(2\,d^2\,x^2\left(2\,d\,e^{2\,i\,c}\,x+3\,i\left(-1+e^{2\,i\,c}\right)\text{Log}\left[1-e^{2\,i\,(c+d\,x)}\right]\right)+6\,d\left(-1+e^{2\,i\,c}\right)x\,\text{PolyLog}\left[2,e^{2\,i\,(c+d\,x)}\right]+3\,i\left(-1+e^{2\,i\,c}\right)\text{PolyLog}\left[3,e^{2\,i\,(c+d\,x)}\right]\right)-\frac{1}{a\,d^4}$$

$$6\,f^3\left(d^2\,x^2\,\text{ArcTanh}[\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]-i\,d\,x\,\text{PolyLog}[2,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]+i\,d\,x\,\text{PolyLog}[2,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]+\text{PolyLog}[3,-\text{Cos}[c+d\,x]-i\,\text{Sin}[c+d\,x]]-\text{PolyLog}[3,\text{Cos}[c+d\,x]+i\,\text{Sin}[c+d\,x]]\right)+\frac{1}{4\,a^2}$$

$$b\,e^{i\,c}\,f^3\,\text{Csc}[c]\left(x^4+\left(-1+e^{-2\,i\,c}\right)x^4+\frac{1}{2\,d^4}e^{-2\,i\,c}\left(-1+e^{2\,i\,c}\right)\left(2\,d^4\,x^4+4\,i\,d^3\,x^3\,\text{Log}\left[1-e^{2\,i\,(c+d\,x)}\right]+6\,d^2\,x^2\,\text{PolyLog}\left[2,e^{2\,i\,(c+d\,x)}\right]+6\,i\,d\,x\,\text{PolyLog}\left[3,e^{2\,i\,(c+d\,x)}\right]-3\,\text{PolyLog}\left[4,e^{2\,i\,(c+d\,x)}\right]\right)\right)+$$

$$\frac{1}{2\,a^2\,b^3\,d^4\left(-1+e^{2\,i\,c}\right)}\left(a^2-b^2\right)^2\left(-4\,i\,d^4\,e^3\,e^{2\,i\,c}\,x-6\,i\,d^4\,e^2\,e^{2\,i\,c}\,f\,x^2-4\,i\,d^4\,e\,e^{2\,i\,c}\,f^2\,x^3-\right.$$

$$i\,d^4\,e^{2\,i\,c}\,f^3\,x^4-2\,i\,d^3\,e^3\,\text{ArcTan}\left[\frac{2\,a\,e^{i\,(c+d\,x)}}{b\left(-1+e^{2\,i\,(c+d\,x)}\right)}\right]+$$

$$2\,i\,d^3\,e^3\,e^{2\,i\,c}\,\text{ArcTan}\left[\frac{2\,a\,e^{i\,(c+d\,x)}}{b\left(-1+e^{2\,i\,(c+d\,x)}\right)}\right]-d^3\,e^3\,\text{Log}\left[4\,a^2\,e^{2\,i\,(c+d\,x)}+b^2\left(-1+e^{2\,i\,(c+d\,x)}\right)^2\right]+$$

$$d^3\,e^3\,e^{2\,i\,c}\,\text{Log}\left[4\,a^2\,e^{2\,i\,(c+d\,x)}+b^2\left(-1+e^{2\,i\,(c+d\,x)}\right)^2\right]-$$

$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]+6\,d^3\,e^2\,e^{2\,i\,c}\,f\,x$$

$$\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]-6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]+$$

$$6\,d^3\,e\,e^{2\,i\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]-2\,d^3\,f^3\,x^3$$

$$\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]+2\,d^3\,e^{2\,i\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}-\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]-$$

$$6\,d^3\,e^2\,f\,x\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]+6\,d^3\,e^2\,e^{2\,i\,c}\,f\,x$$

$$\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]-6\,d^3\,e\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]+$$

$$6\,d^3\,e\,e^{2\,i\,c}\,f^2\,x^2\,\text{Log}\left[1+\frac{b\,e^{i\,(2\,c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)e^{2\,i\,c}}}\right]-2\,d^3\,f^3\,x^3$$

$$\text{Log}\left[1+\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+2\,d^3\,e^{2\,i\,c}\,f^3\,x^3\,\text{Log}\left[1+\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$6\,i\,d^2\left(-1+e^{2\,i\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$6\,i\,d^2\left(-1+e^{2\,i\,c}\right)\,f\,\left(e+f\,x\right)^2\,\text{PolyLog}\left[2,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$12\,d\,e\,f^2\,\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+12\,d\,e\,e^{2\,i\,c}\,f^2$$

$$\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-12\,d\,f^3\,x\,\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$12\,d\,e^{2\,i\,c}\,f^3\,x\,\text{PolyLog}\left[3,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$12\,d\,e\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$12\,d\,e\,e^{2\,i\,c}\,f^2\,\text{PolyLog}\left[3,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$12\,d\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$12\,d\,e^{2\,i\,c}\,f^3\,x\,\text{PolyLog}\left[3,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-$$

$$12\,i\,f^3\,\text{PolyLog}\left[4,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+12\,i\,e^{2\,i\,c}\,f^3$$

$$\text{PolyLog}\left[4,\frac{i\,b\,e^{i\,(2c+d\,x)}}{a\,e^{i\,c}+i\,\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]-12\,i\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]+$$

$$\left.12\,i\,e^{2\,i\,c}\,f^3\,\text{PolyLog}\left[4,-\frac{b\,e^{i\,(2c+d\,x)}}{i\,a\,e^{i\,c}+\sqrt{\left(-a^2+b^2\right)\,e^{2\,i\,c}}}\right]\right)-$$

$$\left(b\,e^3\,\text{Csc}[c]\,\left(-d\,x\,\text{Cos}[c]+\text{Log}[\text{Cos}[d\,x]\,\text{Sin}[c]+\text{Cos}[c]\,\text{Sin}[d\,x]]\,\text{Sin}[c]\right)\right)\Big/$$
$$\left(a^2\,d\,\left(\text{Cos}[c]^2+\text{Sin}[c]^2\right)\right)-$$

$$\frac{i\,\left(-a^2+2\,b^2\right)\,e^3\,x\,\left(1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}{b^3\,\left(-1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}-$$

$$\frac{3\,i\,\left(-a^2+2\,b^2\right)\,e^2\,f\,x^2\,\left(1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}{2\,b^3\,\left(-1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}-$$

$$\frac{i\,\left(-a^2+2\,b^2\right)\,e\,f^2\,x^3\,\left(1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}{b^3\,\left(-1+\text{Cos}[2\,c]+i\,\text{Sin}[2\,c]\right)}-$$

$$\frac{i\left(-a^2+2 b^2\right) f^3 x^4\left(1+\operatorname{Cos}[2 c]+i \operatorname{Sin}[2 c]\right)}{4 b^3\left(-1+\operatorname{Cos}[2 c]+i \operatorname{Sin}[2 c]\right)}+$$

$$\left(-\frac{i a f^3 x^3 \operatorname{Cos}[c]}{2 b^2 d}-\frac{a f^3 x^3 \operatorname{Sin}[c]}{2 b^2 d}+\left(-i d^3 e^3-3 d^2 e^2 f+6 i d e f^2+6 f^3\right)\left(\frac{a \operatorname{Cos}[c]}{2 b^2 d^4}-\frac{i a \operatorname{Sin}[c]}{2 b^2 d^4}\right)+\left(a d^2 e^2 f-2 i a d e f^2-2 a f^3\right)\left(-\frac{3 i x \operatorname{Cos}[c]}{2 b^2 d^3}-\frac{3 x \operatorname{Sin}[c]}{2 b^2 d^3}\right)+\left(a d e f^2-i a f^3\right)\left(-\frac{3 i x^2 \operatorname{Cos}[c]}{2 b^2 d^2}-\frac{3 x^2 \operatorname{Sin}[c]}{2 b^2 d^2}\right)\right)\left(\operatorname{Cos}[d x]-i \operatorname{Sin}[d x]\right)+$$

$$\left(\frac{i a f^3 x^3 \operatorname{Cos}[c]}{2 b^2 d}-\frac{a f^3 x^3 \operatorname{Sin}[c]}{2 b^2 d}+\left(i d^3 e^3-3 d^2 e^2 f-6 i d e f^2+6 f^3\right)\left(\frac{a \operatorname{Cos}[c]}{2 b^2 d^4}+\frac{i a \operatorname{Sin}[c]}{2 b^2 d^4}\right)+\frac{1}{2 b^2 d^2} 3 i x^2\left(a d e f^2 \operatorname{Cos}[c]+i a f^3 \operatorname{Cos}[c]+i a d e f^2 \operatorname{Sin}[c]-a f^3 \operatorname{Sin}[c]\right)+\frac{1}{2 b^2 d^3} 3 i x\left(a d^2 e^2 f \operatorname{Cos}[c]+2 i a d e f^2 \operatorname{Cos}[c]-2 a f^3 \operatorname{Cos}[c]+i a d^2 e^2 f \operatorname{Sin}[c]-2 a d e f^2 \operatorname{Sin}[c]-2 i a f^3 \operatorname{Sin}[c]\right)\right)\left(\operatorname{Cos}[d x]+i \operatorname{Sin}[d x]\right)+$$

$$\left(-\frac{f^3 x^3 \operatorname{Cos}[2 c]}{8 b d}+\frac{i f^3 x^3 \operatorname{Sin}[2 c]}{8 b d}+\left(4 d^3 e^3-6 i d^2 e^2 f-6 d e f^2+3 i f^3\right)\left(-\frac{\operatorname{Cos}[2 c]}{32 b d^4}+\frac{i \operatorname{Sin}[2 c]}{32 b d^4}\right)+\left(2 i d^2 e^2 f+2 d e f^2-i f^3\right)\left(\frac{3 i x \operatorname{Cos}[2 c]}{16 b d^3}+\frac{3 x \operatorname{Sin}[2 c]}{16 b d^3}\right)+\left(2 i d e f^2+f^3\right)\left(\frac{3 i x^2 \operatorname{Cos}[2 c]}{16 b d^2}+\frac{3 x^2 \operatorname{Sin}[2 c]}{16 b d^2}\right)\right)\left(\operatorname{Cos}[2 d x]-i \operatorname{Sin}[2 d x]\right)+$$

$$\left(-\frac{f^3 x^3 \operatorname{Cos}[2 c]}{8 b d}-\frac{i f^3 x^3 \operatorname{Sin}[2 c]}{8 b d}+\left(4 d^3 e^3+6 i d^2 e^2 f-6 d e f^2-3 i f^3\right)\left(-\frac{\operatorname{Cos}[2 c]}{32 b d^4}-\frac{i \operatorname{Sin}[2 c]}{32 b d^4}\right)-\frac{1}{16 b d^3} 3 i x\left(-2 i d^2 e^2 f \operatorname{Cos}[2 c]+2 d e f^2 \operatorname{Cos}[2 c]+i f^3 \operatorname{Cos}[2 c]+2 d^2 e^2 f \operatorname{Sin}[2 c]+2 i d e f^2 \operatorname{Sin}[2 c]-f^3 \operatorname{Sin}[2 c]\right)-\frac{1}{16 b d^2} 3 i x^2\left(-2 i d e f^2 \operatorname{Cos}[2 c]+f^3 \operatorname{Cos}[2 c]+2 d e f^2 \operatorname{Sin}[2 c]+i f^3 \operatorname{Sin}[2 c]\right)\right)$$

$$\left(\operatorname{Cos}[2 d x]+i \operatorname{Sin}[2 d x]\right)+\left(3 b e^2 f \operatorname{Csc}[c] \operatorname{Sec}[c]\left(d^2 e^{i \operatorname{ArcTan}[\operatorname{Tan}[c]]} x^2+\frac{1}{\sqrt{1+\operatorname{Tan}[c]^2}}\left(i d x\left(-\pi+2 \operatorname{ArcTan}[\operatorname{Tan}[c]]\right)-\pi \operatorname{Log}\left[1+e^{-2 i d x}\right]-2\left(d x+\operatorname{ArcTan}[\operatorname{Tan}[c]]\right) \operatorname{Log}\left[1-e^{2 i\left(d x+\operatorname{ArcTan}[\operatorname{Tan}[c]]\right)}\right]+\pi \operatorname{Log}[\operatorname{Cos}[d x]]+2 \operatorname{ArcTan}[\operatorname{Tan}[c]] \operatorname{Log}[\operatorname{Sin}[d x+\operatorname{ArcTan}[\operatorname{Tan}[c]]]]+i \operatorname{PolyLog}\left[2, e^{2 i\left(d x+\operatorname{ArcTan}[\operatorname{Tan}[c]]\right)}\right]\right)\right) \operatorname{Tan}[c]\right) \Big/ \left(2 a^2 d^2 \sqrt{\operatorname{Sec}[c]^2\left(\operatorname{Cos}[c]^2+\operatorname{Sin}[c]^2\right)}\right)$$

Problem 346: Result more than twice size of optimal antiderivative.

$$\int \frac{(e+f x)^2 \operatorname{Cos}[c+d x]^3 \operatorname{Cot}[c+d x]^2}{a+b \operatorname{Sin}[c+d x]} \, dx$$

Optimal (type 4, 1051 leaves, 60 steps):

$$-\frac{b e f x}{2 a^2 d}-\frac{(a^2-b^2) e f x}{2 a^2 b d}-\frac{b f^2 x^2}{4 a^2 d}-\frac{(a^2-b^2) f^2 x^2}{4 a^2 b d}+\frac{i b (e+f x)^3}{3 a^2 f}-\frac{i (a^2-b^2)^2 (e+f x)^3}{3 a^2 b^3 f}-\frac{4 f (e+f x) \operatorname{ArcTanh}[e^{i (c+d x)}]}{a d^2}-\frac{2 f (e+f x) \operatorname{Cos}[c+d x]}{a d^2}-\frac{2 (a^2-b^2) f (e+f x) \operatorname{Cos}[c+d x]}{a b^2 d^2}-\frac{(e+f x)^2 \operatorname{Csc}[c+d x]}{a d}+\frac{(a^2-b^2)^2 (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^3 d}+\frac{(a^2-b^2)^2 (e+f x)^2 \operatorname{Log}\left[1-\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^3 d}-\frac{b (e+f x)^2 \operatorname{Log}[1-e^{2 i (c+d x)}]}{a^2 d}+\frac{2 i f^2 \operatorname{PolyLog}[2,-e^{i (c+d x)}]}{a d^3}-\frac{2 i f^2 \operatorname{PolyLog}[2,e^{i (c+d x)}]}{a d^3}-\frac{2 i (a^2-b^2)^2 f (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^3 d^2}-\frac{2 i (a^2-b^2)^2 f (e+f x) \operatorname{PolyLog}\left[2,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^3 d^2}+\frac{i b f (e+f x) \operatorname{PolyLog}[2,e^{2 i (c+d x)}]}{a^2 d^2}+\frac{2 (a^2-b^2)^2 f^2 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2 b^3 d^3}+\frac{2 (a^2-b^2)^2 f^2 \operatorname{PolyLog}\left[3,\frac{i b e^{i (c+d x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2 b^3 d^3}-\frac{b f^2 \operatorname{PolyLog}[3,e^{2 i (c+d x)}]}{2 a^2 d^3}+\frac{2 f^2 \operatorname{Sin}[c+d x]}{a d^3}+\frac{2 (a^2-b^2) f^2 \operatorname{Sin}[c+d x]}{a b^2 d^3}-\frac{(e+f x)^2 \operatorname{Sin}[c+d x]}{a d}-\frac{(a^2-b^2) (e+f x)^2 \operatorname{Sin}[c+d x]}{a b^2 d}+\frac{b f (e+f x) \operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]}{2 a^2 d^2}+\frac{(a^2-b^2) f (e+f x) \operatorname{Cos}[c+d x] \operatorname{Sin}[c+d x]}{2 a^2 b d^2}-\frac{b f^2 \operatorname{Sin}[c+d x]^2}{4 a^2 d^3}-\frac{(a^2-b^2) f^2 \operatorname{Sin}[c+d x]^2}{4 a^2 b d^3}+\frac{b (e+f x)^2 \operatorname{Sin}[c+d x]^2}{2 a^2 d}+\frac{(a^2-b^2) (e+f x)^2 \operatorname{Sin}[c+d x]^2}{2 a^2 b d}$$

Result (type 4, 5228 leaves):

$$\frac{2 e f \operatorname{Log}\left[\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]\right]}{a d^2}+\frac{1}{a d^3} 2 f^2 \left((c+d x) \left(\operatorname{Log}[1-e^{i (c+d x)}]-\operatorname{Log}[1+e^{i (c+d x)}]\right)-c \operatorname{Log}\left[\operatorname{Tan}\left[\frac{1}{2} (c+d x)\right]\right]+i \left(\operatorname{PolyLog}[2,-e^{i (c+d x)}]-\operatorname{PolyLog}[2,e^{i (c+d x)}]\right)\right)+\frac{1}{12 a^2 d^3}$$

$$b\, e^{-i c} f^2 \operatorname{Csc}[c] \left(2 d^2 x^2 \left(2 d\, e^{2 i c} x + 3 i \left(-1+e^{2 i c}\right) \operatorname{Log}\left[1-e^{2 i (c+d x)}\right]\right) + 6 d \left(-1+e^{2 i c}\right) x \operatorname{PolyLog}\left[2, e^{2 i (c+d x)}\right] + 3 i \left(-1+e^{2 i c}\right) \operatorname{PolyLog}\left[3, e^{2 i (c+d x)}\right]\right) +$$

$$\frac{1}{6 a^2 b^3 d^3 \left(-1+e^{2 i c}\right)} \left(a^2-b^2\right)^2 \left(-12 i d^3 e^2 e^{2 i c} x - 12 i d^3 e\, e^{2 i c} f x^2 - 4 i d^3 e^{2 i c} f^2 x^3 - \right.$$

$$6 i d^2 e^2 \operatorname{ArcTan}\left[\frac{2 a\, e^{i (c+d x)}}{b \left(-1+e^{2 i (c+d x)}\right)}\right] + 6 i d^2 e^2 e^{2 i c} \operatorname{ArcTan}\left[\frac{2 a\, e^{i (c+d x)}}{b \left(-1+e^{2 i (c+d x)}\right)}\right] -$$

$$3 d^2 e^2 \operatorname{Log}\left[4 a^2 e^{2 i (c+d x)} + b^2 \left(-1+e^{2 i (c+d x)}\right)^2\right] + 3 d^2 e^2 e^{2 i c}$$

$$\operatorname{Log}\left[4 a^2 e^{2 i (c+d x)} + b^2 \left(-1+e^{2 i (c+d x)}\right)^2\right] - 12 d^2 e f x \operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} - \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] +$$

$$12 d^2 e\, e^{2 i c} f x \operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} - \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] -$$

$$6 d^2 f^2 x^2 \operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} - \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] + 6 d^2 e^{2 i c} f^2 x^2$$

$$\operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} - \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] - 12 d^2 e f x \operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] +$$

$$12 d^2 e\, e^{2 i c} f x \operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] - 6 d^2 f^2 x^2$$

$$\operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] + 6 d^2 e^{2 i c} f^2 x^2 \operatorname{Log}\left[1+\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] -$$

$$12 i d \left(-1+e^{2 i c}\right) f (e+f x) \operatorname{PolyLog}\left[2, \frac{i b\, e^{i (2 c+d x)}}{a\, e^{i c} + i \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] -$$

$$12 i d \left(-1+e^{2 i c}\right) f (e+f x) \operatorname{PolyLog}\left[2, -\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] -$$

$$12 f^2 \operatorname{PolyLog}\left[3, \frac{i b\, e^{i (2 c+d x)}}{a\, e^{i c} + i \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] + 12 e^{2 i c} f^2$$

$$\operatorname{PolyLog}\left[3, \frac{i b\, e^{i (2 c+d x)}}{a\, e^{i c} + i \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] - 12 f^2 \operatorname{PolyLog}\left[3, -\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right] +$$

$$\left. 12 e^{2 i c} f^2 \operatorname{PolyLog}\left[3, -\frac{b\, e^{i (2 c+d x)}}{i a\, e^{i c} + \sqrt{\left(-a^2+b^2\right) e^{2 i c}}}\right]\right) -$$

$$\left(b e^2 \operatorname{Csc}[c] \left(-d x \operatorname{Cos}[c] + \operatorname{Log}[\operatorname{Cos}[d x] \operatorname{Sin}[c] + \operatorname{Cos}[c] \operatorname{Sin}[d x]] \operatorname{Sin}[c]\right)\right) / \left(a^2 d \left(\operatorname{Cos}[c]^2 + \operatorname{Sin}[c]^2\right)\right) +$$

$$\operatorname{Csc}[c] \operatorname{Csc}[c+d x] \left(\frac{\operatorname{Cos}[2 c+2 d x]}{192 a b^3 d^3} - \frac{i \operatorname{Sin}[2 c+2 d x]}{192 a b^3 d^3}\right)$$

$$\left(-12 a b^2 d^2 e^2 \operatorname{Cos}[d x] + 12 i a b^2 d e f \operatorname{Cos}[d x] + 6 a b^2 f^2 \operatorname{Cos}[d x] + 48 i a^3 d^3 e^2 x \operatorname{Cos}[d x] - \right.$$
$$96 i a b^2 d^3 e^2 x \operatorname{Cos}[d x] - 24 a b^2 d^2 e f x \operatorname{Cos}[d x] + 12 i a b^2 d f^2 x \operatorname{Cos}[d x] +$$
$$48 i a^3 d^3 e f x^2 \operatorname{Cos}[d x] - 96 i a b^2 d^3 e f x^2 \operatorname{Cos}[d x] - 12 a b^2 d^2 f^2 x^2 \operatorname{Cos}[d x] +$$

$16 i a^3 d^3 f^2 x^3 \text{Cos}[d x] - 32 i a b^2 d^3 f^2 x^3 \text{Cos}[d x] + 12 a b^2 d^2 e^2 \text{Cos}[2 c + d x] -$
$12 i a b^2 d e f \text{Cos}[2 c + d x] - 6 a b^2 f^2 \text{Cos}[2 c + d x] + 48 i a^3 d^3 e^2 x \text{Cos}[2 c + d x] -$
$96 i a b^2 d^3 e^2 x \text{Cos}[2 c + d x] + 24 a b^2 d^2 e f x \text{Cos}[2 c + d x] - 12 i a b^2 d f^2 x \text{Cos}[2 c + d x] +$
$48 i a^3 d^3 e f x^2 \text{Cos}[2 c + d x] - 96 i a b^2 d^3 e f x^2 \text{Cos}[2 c + d x] + 12 a b^2 d^2 f^2 x^2 \text{Cos}[2 c + d x] +$
$16 i a^3 d^3 f^2 x^3 \text{Cos}[2 c + d x] - 32 i a b^2 d^3 f^2 x^3 \text{Cos}[2 c + d x] - 48 i a^2 b d^2 e^2 \text{Cos}[c + 2 d x] -$
$96 i b^3 d^2 e^2 \text{Cos}[c + 2 d x] + 96 i a^2 b f^2 \text{Cos}[c + 2 d x] - 96 i a^2 b d^2 e f x \text{Cos}[c + 2 d x] -$
$192 i b^3 d^2 e f x \text{Cos}[c + 2 d x] - 48 i a^2 b d^2 f^2 x^2 \text{Cos}[c + 2 d x] - 96 i b^3 d^2 f^2 x^2 \text{Cos}[c + 2 d x] +$
$48 i a^2 b d^2 e^2 \text{Cos}[3 c + 2 d x] + 96 i b^3 d^2 e^2 \text{Cos}[3 c + 2 d x] - 96 i a^2 b f^2 \text{Cos}[3 c + 2 d x] +$
$96 i a^2 b d^2 e f x \text{Cos}[3 c + 2 d x] + 192 i b^3 d^2 e f x \text{Cos}[3 c + 2 d x] +$
$48 i a^2 b d^2 f^2 x^2 \text{Cos}[3 c + 2 d x] + 96 i b^3 d^2 f^2 x^2 \text{Cos}[3 c + 2 d x] + 6 a b^2 d^2 e^2 \text{Cos}[2 c + 3 d x] +$
$6 i a b^2 d e f \text{Cos}[2 c + 3 d x] - 3 a b^2 f^2 \text{Cos}[2 c + 3 d x] - 48 i a^3 d^3 e^2 x \text{Cos}[2 c + 3 d x] +$
$96 i a b^2 d^3 e^2 x \text{Cos}[2 c + 3 d x] + 12 a b^2 d^2 e f x \text{Cos}[2 c + 3 d x] + 6 i a b^2 d f^2 x \text{Cos}[2 c + 3 d x] -$
$48 i a^3 d^3 e f x^2 \text{Cos}[2 c + 3 d x] + 96 i a b^2 d^3 e f x^2 \text{Cos}[2 c + 3 d x] +$
$6 a b^2 d^2 f^2 x^2 \text{Cos}[2 c + 3 d x] - 16 i a^3 d^3 f^2 x^3 \text{Cos}[2 c + 3 d x] + 32 i a b^2 d^3 f^2 x^3 \text{Cos}[2 c + 3 d x] -$
$6 a b^2 d^2 e^2 \text{Cos}[4 c + 3 d x] - 6 i a b^2 d e f \text{Cos}[4 c + 3 d x] + 3 a b^2 f^2 \text{Cos}[4 c + 3 d x] -$
$48 i a^3 d^3 e^2 x \text{Cos}[4 c + 3 d x] + 96 i a b^2 d^3 e^2 x \text{Cos}[4 c + 3 d x] - 12 a b^2 d^2 e f x \text{Cos}[4 c + 3 d x] -$
$6 i a b^2 d f^2 x \text{Cos}[4 c + 3 d x] - 48 i a^3 d^3 e f x^2 \text{Cos}[4 c + 3 d x] + 96 i a b^2 d^3 e f x^2 \text{Cos}[4 c + 3 d x] -$
$6 a b^2 d^2 f^2 x^2 \text{Cos}[4 c + 3 d x] - 16 i a^3 d^3 f^2 x^3 \text{Cos}[4 c + 3 d x] + 32 i a b^2 d^3 f^2 x^3 \text{Cos}[4 c + 3 d x] +$
$24 i a^2 b d^2 e^2 \text{Cos}[3 c + 4 d x] - 48 a^2 b d e f \text{Cos}[3 c + 4 d x] - 48 i a^2 b f^2 \text{Cos}[3 c + 4 d x] +$
$48 i a^2 b d^2 e f x \text{Cos}[3 c + 4 d x] - 48 a^2 b d f^2 x \text{Cos}[3 c + 4 d x] + 24 i a^2 b d^2 f^2 x^2 \text{Cos}[3 c + 4 d x] -$
$24 i a^2 b d^2 e^2 \text{Cos}[5 c + 4 d x] + 48 a^2 b d e f \text{Cos}[5 c + 4 d x] + 48 i a^2 b f^2 \text{Cos}[5 c + 4 d x] -$
$48 i a^2 b d^2 e f x \text{Cos}[5 c + 4 d x] + 48 a^2 b d f^2 x \text{Cos}[5 c + 4 d x] - 24 i a^2 b d^2 f^2 x^2 \text{Cos}[5 c + 4 d x] -$
$6 a b^2 d^2 e^2 \text{Cos}[4 c + 5 d x] - 6 i a b^2 d e f \text{Cos}[4 c + 5 d x] + 3 a b^2 f^2 \text{Cos}[4 c + 5 d x] -$
$12 a b^2 d^2 e f x \text{Cos}[4 c + 5 d x] - 6 i a b^2 d f^2 x \text{Cos}[4 c + 5 d x] - 6 a b^2 d^2 f^2 x^2 \text{Cos}[4 c + 5 d x] +$
$6 a b^2 d^2 e^2 \text{Cos}[6 c + 5 d x] + 6 i a b^2 d e f \text{Cos}[6 c + 5 d x] - 3 a b^2 f^2 \text{Cos}[6 c + 5 d x] +$
$12 a b^2 d^2 e f x \text{Cos}[6 c + 5 d x] + 6 i a b^2 d f^2 x \text{Cos}[6 c + 5 d x] + 6 a b^2 d^2 f^2 x^2 \text{Cos}[6 c + 5 d x] +$
$48 a^2 b d^2 e^2 \text{Sin}[c] - 96 i a^2 b d e f \text{Sin}[c] - 96 a^2 b f^2 \text{Sin}[c] + 96 a^2 b d^2 e f x \text{Sin}[c] -$
$96 i a^2 b d f^2 x \text{Sin}[c] + 48 a^2 b d^2 f^2 x^2 \text{Sin}[c] - 48 a^3 d^3 e^2 x \text{Sin}[d x] + 96 a b^2 d^3 e^2 x \text{Sin}[d x] -$
$48 a^3 d^3 e f x^2 \text{Sin}[d x] + 96 a b^2 d^3 e f x^2 \text{Sin}[d x] - 16 a^3 d^3 f^2 x^3 \text{Sin}[d x] +$
$32 a b^2 d^3 f^2 x^3 \text{Sin}[d x] - 48 a^3 d^3 e^2 x \text{Sin}[2 c + d x] + 96 a b^2 d^3 e^2 x \text{Sin}[2 c + d x] -$
$48 a^3 d^3 e f x^2 \text{Sin}[2 c + d x] + 96 a b^2 d^3 e f x^2 \text{Sin}[2 c + d x] - 16 a^3 d^3 f^2 x^3 \text{Sin}[2 c + d x] +$
$32 a b^2 d^3 f^2 x^3 \text{Sin}[2 c + d x] + 48 a^2 b d^2 e^2 \text{Sin}[c + 2 d x] + 96 b^3 d^2 e^2 \text{Sin}[c + 2 d x] -$
$96 a^2 b f^2 \text{Sin}[c + 2 d x] + 96 a^2 b d^2 e f x \text{Sin}[c + 2 d x] + 192 b^3 d^2 e f x \text{Sin}[c + 2 d x] +$
$48 a^2 b d^2 f^2 x^2 \text{Sin}[c + 2 d x] + 96 b^3 d^2 f^2 x^2 \text{Sin}[c + 2 d x] - 48 a^2 b d^2 e^2 \text{Sin}[3 c + 2 d x] -$
$96 b^3 d^2 e^2 \text{Sin}[3 c + 2 d x] + 96 a^2 b f^2 \text{Sin}[3 c + 2 d x] - 96 a^2 b d^2 e f x \text{Sin}[3 c + 2 d x] -$
$192 b^3 d^2 e f x \text{Sin}[3 c + 2 d x] - 48 a^2 b d^2 f^2 x^2 \text{Sin}[3 c + 2 d x] - 96 b^3 d^2 f^2 x^2 \text{Sin}[3 c + 2 d x] +$
$6 i a b^2 d^2 e^2 \text{Sin}[2 c + 3 d x] - 6 a b^2 d e f \text{Sin}[2 c + 3 d x] - 3 i a b^2 f^2 \text{Sin}[2 c + 3 d x] +$
$48 a^3 d^3 e^2 x \text{Sin}[2 c + 3 d x] - 96 a b^2 d^3 e^2 x \text{Sin}[2 c + 3 d x] + 12 i a b^2 d^2 e f x \text{Sin}[2 c + 3 d x] -$
$6 a b^2 d f^2 x \text{Sin}[2 c + 3 d x] + 48 a^3 d^3 e f x^2 \text{Sin}[2 c + 3 d x] - 96 a b^2 d^3 e f x^2 \text{Sin}[2 c + 3 d x] +$
$6 i a b^2 d^2 f^2 x^2 \text{Sin}[2 c + 3 d x] + 16 a^3 d^3 f^2 x^3 \text{Sin}[2 c + 3 d x] - 32 a b^2 d^3 f^2 x^3 \text{Sin}[2 c + 3 d x] -$
$6 i a b^2 d^2 e^2 \text{Sin}[4 c + 3 d x] + 6 a b^2 d e f \text{Sin}[4 c + 3 d x] + 3 i a b^2 f^2 \text{Sin}[4 c + 3 d x] +$
$48 a^3 d^3 e^2 x \text{Sin}[4 c + 3 d x] - 96 a b^2 d^3 e^2 x \text{Sin}[4 c + 3 d x] - 12 i a b^2 d^2 e f x \text{Sin}[4 c + 3 d x] +$
$6 a b^2 d f^2 x \text{Sin}[4 c + 3 d x] + 48 a^3 d^3 e f x^2 \text{Sin}[4 c + 3 d x] - 96 a b^2 d^3 e f x^2 \text{Sin}[4 c + 3 d x] -$
$6 i a b^2 d^2 f^2 x^2 \text{Sin}[4 c + 3 d x] + 16 a^3 d^3 f^2 x^3 \text{Sin}[4 c + 3 d x] - 32 a b^2 d^3 f^2 x^3 \text{Sin}[4 c + 3 d x] -$
$24 a^2 b d^2 e^2 \text{Sin}[3 c + 4 d x] - 48 i a^2 b d e f \text{Sin}[3 c + 4 d x] + 48 a^2 b f^2 \text{Sin}[3 c + 4 d x] -$
$48 a^2 b d^2 e f x \text{Sin}[3 c + 4 d x] - 48 i a^2 b d f^2 x \text{Sin}[3 c + 4 d x] - 24 a^2 b d^2 f^2 x^2 \text{Sin}[3 c + 4 d x] +$
$24 a^2 b d^2 e^2 \text{Sin}[5 c + 4 d x] + 48 i a^2 b d e f \text{Sin}[5 c + 4 d x] - 48 a^2 b f^2 \text{Sin}[5 c + 4 d x] +$
$48 a^2 b d^2 e f x \text{Sin}[5 c + 4 d x] + 48 i a^2 b d f^2 x \text{Sin}[5 c + 4 d x] + 24 a^2 b d^2 f^2 x^2 \text{Sin}[5 c + 4 d x] -$
$6 i a b^2 d^2 e^2 \text{Sin}[4 c + 5 d x] + 6 a b^2 d e f \text{Sin}[4 c + 5 d x] + 3 i a b^2 f^2 \text{Sin}[4 c + 5 d x] -$
$12 i a b^2 d^2 e f x \text{Sin}[4 c + 5 d x] + 6 a b^2 d f^2 x \text{Sin}[4 c + 5 d x] - 6 i a b^2 d^2 f^2 x^2 \text{Sin}[4 c + 5 d x] +$
$6 i a b^2 d^2 e^2 \text{Sin}[6 c + 5 d x] - 6 a b^2 d e f \text{Sin}[6 c + 5 d x] - 3 i a b^2 f^2 \text{Sin}[6 c + 5 d x] +$

$$12\,i\,a\,b^2\,d^2\,e\,f\,x\,\mathrm{Sin}[6\,c+5\,d\,x]-6\,a\,b^2\,d\,f^2\,x\,\mathrm{Sin}[6\,c+5\,d\,x]+6\,i\,a\,b^2\,d^2\,f^2\,x^2\,\mathrm{Sin}[6\,c+5\,d\,x]\Big)+$$

$$\Bigg(b\,e\,f\,\mathrm{Csc}[c]\,\mathrm{Sec}[c]\,\Bigg(d^2\,e^{i\,\mathrm{ArcTan}[\mathrm{Tan}[c]]}\,x^2+\frac{1}{\sqrt{1+\mathrm{Tan}[c]^2}}\Big(i\,d\,x\,\big(-\pi+2\,\mathrm{ArcTan}[\mathrm{Tan}[c]]\big)-$$
$$\pi\,\mathrm{Log}\left[1+e^{-2\,i\,d\,x}\right]-2\,\big(d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]\big)\,\mathrm{Log}\left[1-e^{2\,i\,(d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]])}\right]+$$
$$\pi\,\mathrm{Log}[\mathrm{Cos}[d\,x]]+2\,\mathrm{ArcTan}[\mathrm{Tan}[c]]\,\mathrm{Log}[\mathrm{Sin}[d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]]]]+$$
$$i\,\mathrm{PolyLog}\left[2,\,e^{2\,i\,(d\,x+\mathrm{ArcTan}[\mathrm{Tan}[c]])}\right]\Big)\,\mathrm{Tan}[c]\Bigg)\Bigg)\Bigg/\left(a^2\,d^2\,\sqrt{\mathrm{Sec}[c]^2\,\left(\mathrm{Cos}[c]^2+\mathrm{Sin}[c]^2\right)}\right)$$

Problem 347: Result more than twice size of optimal antiderivative.

$$\int\frac{(e+f\,x)\,\mathrm{Cos}[c+d\,x]^3\,\mathrm{Cot}[c+d\,x]^2}{a+b\,\mathrm{Sin}[c+d\,x]}\,dx$$

Optimal (type 4, 641 leaves, 45 steps):

$$-\frac{b\,f\,x}{4\,a^2\,d}-\frac{\left(a^2-b^2\right)\,f\,x}{4\,a^2\,b\,d}+\frac{i\,b\,(e+f\,x)^2}{2\,a^2\,f}-\frac{i\,\left(a^2-b^2\right)^2\,(e+f\,x)^2}{2\,a^2\,b^3\,f}-$$
$$\frac{f\,\mathrm{ArcTanh}[\mathrm{Cos}[c+d\,x]]}{a\,d^2}-\frac{f\,\mathrm{Cos}[c+d\,x]}{a\,d^2}-\frac{\left(a^2-b^2\right)\,f\,\mathrm{Cos}[c+d\,x]}{a\,b^2\,d^2}-\frac{(e+f\,x)\,\mathrm{Csc}[c+d\,x]}{a\,d}+$$
$$\frac{\left(a^2-b^2\right)^2\,(e+f\,x)\,\mathrm{Log}\left[1-\frac{i\,b\,e^{i\,(c+d\,x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d}+\frac{\left(a^2-b^2\right)^2\,(e+f\,x)\,\mathrm{Log}\left[1-\frac{i\,b\,e^{i\,(c+d\,x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d}-$$
$$\frac{b\,(e+f\,x)\,\mathrm{Log}\left[1-e^{2\,i\,(c+d\,x)}\right]}{a^2\,d}-\frac{i\,\left(a^2-b^2\right)^2\,f\,\mathrm{PolyLog}\left[2,\,\frac{i\,b\,e^{i\,(c+d\,x)}}{a-\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^2}-$$
$$\frac{i\,\left(a^2-b^2\right)^2\,f\,\mathrm{PolyLog}\left[2,\,\frac{i\,b\,e^{i\,(c+d\,x)}}{a+\sqrt{a^2-b^2}}\right]}{a^2\,b^3\,d^2}+\frac{i\,b\,f\,\mathrm{PolyLog}\left[2,\,e^{2\,i\,(c+d\,x)}\right]}{2\,a^2\,d^2}-$$
$$\frac{(e+f\,x)\,\mathrm{Sin}[c+d\,x]}{a\,d}-\frac{\left(a^2-b^2\right)\,(e+f\,x)\,\mathrm{Sin}[c+d\,x]}{a\,b^2\,d}+\frac{b\,f\,\mathrm{Cos}[c+d\,x]\,\mathrm{Sin}[c+d\,x]}{4\,a^2\,d^2}+$$
$$\frac{\left(a^2-b^2\right)\,f\,\mathrm{Cos}[c+d\,x]\,\mathrm{Sin}[c+d\,x]}{4\,a^2\,b\,d^2}+\frac{b\,(e+f\,x)\,\mathrm{Sin}[c+d\,x]^2}{2\,a^2\,d}+\frac{\left(a^2-b^2\right)\,(e+f\,x)\,\mathrm{Sin}[c+d\,x]^2}{2\,a^2\,b\,d}$$

Result (type 4, 1644 leaves):

$$-\frac{a\,f\,\mathrm{Cos}[c+d\,x]}{b^2\,d^2}-\frac{\big(d\,e-c\,f+f\,(c+d\,x)\big)\,\mathrm{Cos}[2\,(c+d\,x)]}{4\,b\,d^2}+\frac{1}{2\,a\,d^2}$$
$$\left(-d\,e\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]+c\,f\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]-f\,(c+d\,x)\,\mathrm{Cos}\left[\frac{1}{2}\,(c+d\,x)\right]\right)\,\mathrm{Csc}\left[\frac{1}{2}\,(c+d\,x)\right]-$$
$$\frac{b\,e\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^2\,d}+\frac{b\,c\,f\,\mathrm{Log}[\mathrm{Sin}[c+d\,x]]}{a^2\,d^2}+\frac{a^2\,e\,\mathrm{Log}\left[1+\frac{b\,\mathrm{Sin}[c+d\,x]}{a}\right]}{b^3\,d}-$$
$$\frac{2\,e\,\mathrm{Log}\left[1+\frac{b\,\mathrm{Sin}[c+d\,x]}{a}\right]}{b\,d}+\frac{b\,e\,\mathrm{Log}\left[1+\frac{b\,\mathrm{Sin}[c+d\,x]}{a}\right]}{a^2\,d}-\frac{a^2\,c\,f\,\mathrm{Log}\left[1+\frac{b\,\mathrm{Sin}[c+d\,x]}{a}\right]}{b^3\,d^2}+$$

$$\frac{2\,c\,f\,\text{Log}\left[1+\frac{b\,\text{Sin}[c+d\,x]}{a}\right]}{b\,d^2}-\frac{b\,c\,f\,\text{Log}\left[1+\frac{b\,\text{Sin}[c+d\,x]}{a}\right]}{a^2\,d^2}+\frac{f\,\text{Log}\left[\text{Tan}\left[\frac{1}{2}\,(c+d\,x)\right]\right]}{a\,d^2}-\frac{1}{d^2}$$

$$2\,f\left(\frac{(c+d\,x)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]}{b}-\frac{1}{b}\left(-\frac{1}{2}\,i\,\left(-c+\frac{\pi}{2}-d\,x\right)^2+4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right.\right.$$

$$\text{ArcTan}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{a^2-b^2}}\right]+\left(-c+\frac{\pi}{2}-d\,x+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{i\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+\left(-c+\frac{\pi}{2}-d\,x-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)$$

$$\text{Log}\left[1+\frac{\left(a+\sqrt{a^2-b^2}\right)\,e^{i\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]-\left(-c+\frac{\pi}{2}-d\,x\right)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]-$$

$$\left.\left.i\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{i\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+\text{PolyLog}\left[2,-\frac{\left(a+\sqrt{a^2-b^2}\right)\,e^{i\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]\right)\right)\right)+$$

$$\frac{1}{b^2\,d^2}a^2\,f\left(\frac{(c+d\,x)\,\text{Log}[a+b\,\text{Sin}[c+d\,x]]}{b}-\frac{1}{b}\right.$$

$$\left(-\frac{1}{2}\,i\,\left(-c+\frac{\pi}{2}-d\,x\right)^2+4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\,\text{ArcTan}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\,\left(-c+\frac{\pi}{2}-d\,x\right)\right]}{\sqrt{a^2-b^2}}\right]+\right.$$

$$\left(-c+\frac{\pi}{2}-d\,x+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\,\text{Log}\left[1+\frac{\left(a-\sqrt{a^2-b^2}\right)\,e^{i\,\left(-c+\frac{\pi}{2}-d\,x\right)}}{b}\right]+$$

$$\left(-c+\frac{\pi}{2}-d x-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(a+\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]-$$

$$\left(-c+\frac{\pi}{2}-d x\right)\text{Log}[a+b\,\text{Sin}[c+d x]]-$$

$$i\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]+\text{PolyLog}\left[2,-\frac{\left(a+\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]\right)\Bigg)\Bigg)+$$

$$\frac{1}{a^2 d^2}b^2 f\left(\frac{(c+d x)\,\text{Log}[a+b\,\text{Sin}[c+d x]]}{b}-\frac{1}{b}\right.$$

$$\left(-\frac{1}{2}i\left(-c+\frac{\pi}{2}-d x\right)^2+4\,i\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\text{ArcTan}\left[\frac{(a-b)\,\text{Tan}\left[\frac{1}{2}\left(-c+\frac{\pi}{2}-d x\right)\right]}{\sqrt{a^2-b^2}}\right]+\right.$$

$$\left(-c+\frac{\pi}{2}-d x+2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(a-\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]+$$

$$\left(-c+\frac{\pi}{2}-d x-2\,\text{ArcSin}\left[\frac{\sqrt{\frac{a+b}{b}}}{\sqrt{2}}\right]\right)\text{Log}\left[1+\frac{\left(a+\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]-$$

$$\left(-c+\frac{\pi}{2}-d x\right)\text{Log}[a+b\,\text{Sin}[c+d x]]-$$

$$i\left(\text{PolyLog}\left[2,-\frac{\left(a-\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]+\text{PolyLog}\left[2,-\frac{\left(a+\sqrt{a^2-b^2}\right)e^{i\left(-c+\frac{\pi}{2}-d x\right)}}{b}\right]\right)\Bigg)\Bigg)-$$

$$\frac{1}{a^2 d^2}b f\left((c+d x)\,\text{Log}\left[1-e^{2 i (c+d x)}\right]-\frac{1}{2}i\left((c+d x)^2+\text{PolyLog}\left[2,e^{2 i (c+d x)}\right]\right)\right)+$$

$$\frac{1}{2 a d^2}$$

$$\text{Sec}\left[\frac{1}{2}\left(c+d\,x\right)\right]$$

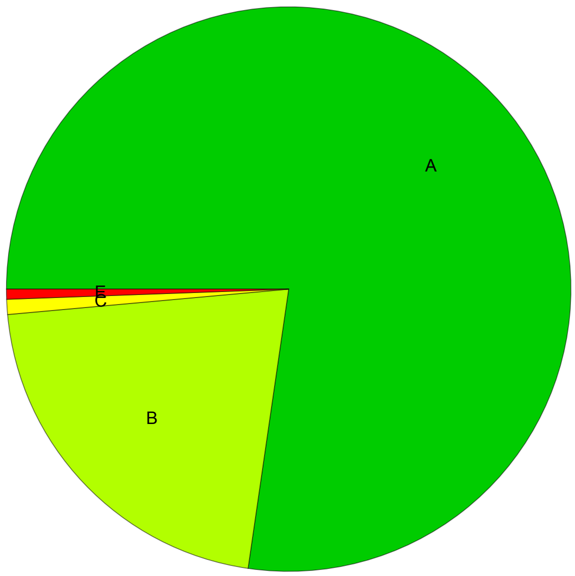
$$\left(-d\,e\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]+c\,f\,\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]-f\left(c+d\,x\right)\text{Sin}\left[\frac{1}{2}\left(c+d\,x\right)\right]\right)-$$

$$\frac{a\left(d\,e-c\,f+f\left(c+d\,x\right)\right)\text{Sin}\left[c+d\,x\right]}{b^2\,d^2}+$$

$$\frac{f\,\text{Sin}\left[2\left(c+d\,x\right)\right]}{8\,b\,d^2}$$

Summary of Integration Test Results

348 integration problems



A - 269 optimal antiderivatives

B - 74 more than twice size of optimal antiderivatives

C - 3 unnecessarily complex antiderivatives

D - 0 unable to integrate problems

E - 2 integration timeouts