Mathematica 11.3 Integration Test Results

Test results for the 263 problems in "3.2.2 (f+g x)^m (h+i x)^q (A+B log(e ((a+b x) over (c+d x))^n))^p.m"

Problem 6: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{\left(a\,g + b\,g\,x\right)^2}\,dx$$

Optimal (type 4, 142 leaves, 5 steps):

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

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

Result (type 4, 317 leaves):

$$\frac{1}{2\,b^2\,g^2}$$

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

$$B\,d\left(\text{Log}\left[\frac{a}{b} + x\right]^2 + \frac{2\,a\,\left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{a + b\,x} + \right.$$

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

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

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

Problem 14: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{a\,g + b\,g\,x}\,dx$$

Optimal (type 4, 276 leaves, 10 steps):

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

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

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

Result (type 4, 615 leaves):

$$\frac{1}{2\,b^3\,g}\,i^2\,\left(4\,b^2\,B\,c^2-6\,a\,b\,B\,c\,d+2\,a^2\,B\,d^2+4\,A\,b^2\,c\,d\,x-b^2\,B\,c\,d\,x-2\,a\,A\,b\,d^2\,x+a\,b\,B\,d^2\,x+\right.$$

$$A\,b^2\,d^2\,x^2+B\,(b\,c-a\,d)^2\,\text{Log}\left[\frac{a}{b}+x\right]^2-4\,b^2\,B\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]+2\,a\,b\,B\,c\,d\,\text{Log}\left[\frac{c}{d}+x\right]+$$

$$2\,A\,b^2\,c^2\,\text{Log}[a+b\,x]-4\,a\,A\,b\,c\,d\,\text{Log}[a+b\,x]+2\,a^2\,A\,d^2\,\text{Log}[a+b\,x]-a^2\,B\,d^2\,\text{Log}[a+b\,x]+$$

$$2\,b^2\,B\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x]-4\,a\,b\,B\,c\,d\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x]+$$

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

$$2\,b^2\,B\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+4\,a\,b\,B\,c\,d\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$

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

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

$$4\,a\,b\,B\,c\,d\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+2\,a^2\,B\,d^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$$

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

Problem 15: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(a\,g+b\,g\,x)^2}\,\mathbb{d}x$$

Optimal (type 4, 247 leaves, 8 steps):

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

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

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

Result (type 4, 595 leaves) :

$$\frac{1}{b^3\,g^2}\,i^2\,\Bigg(A\,b\,d^2\,x - \frac{A\,(b\,c - a\,d)^2}{a + b\,x} + 2\,A\,d\,(b\,c - a\,d)\,\text{Log}[a + b\,x] - $$

$$\left(b^2\,B\,c^2\,\left(-d\,(a + b\,x)\,\text{Log}\Big[\frac{c}{d} + x\Big] + d\,(a + b\,x)\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\right. +$$

$$\left.(b\,c - a\,d)\,\Big(1 + \text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)\right)\right)\Bigg/\big((b\,c - a\,d)\,(a + b\,x)\big) +$$

$$b\,B\,c\,d\,\left(\text{Log}\Big[\frac{a}{b} + x\Big]^2 + \frac{2\,a\,\big(1 + \text{Log}\big[\frac{a}{b} + x\big]\big)}{a + b\,x} + 2\,\Big(\frac{a}{a + b\,x} + \text{Log}[a + b\,x]\Big)\right.$$

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

$$\left(2\,a\,\Big(\big(-b\,c + a\,d\big)\,\text{Log}\Big[\frac{c}{d} + x\Big] + d\,(a + b\,x)\,\big(\text{Log}[a + b\,x] - \text{Log}[c + d\,x]\big)\Big)\right)\Bigg/$$

$$\left.\big((b\,c - a\,d)\,(a + b\,x)\big) - 2\,\Big(\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + \text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big)\right) -$$

$$B\,d^2\,\left(-(a + b\,x)\,\Big(-1 + \text{Log}\Big[\frac{a}{b} + x\Big]\Big) + a\,\text{Log}\Big[\frac{a}{b} + x\Big]^2 + \frac{a^2\,\big(1 + \text{Log}\big[\frac{a}{b} + x\big]\big)}{a + b\,x}\right. +$$

$$b\,\Big(\frac{c}{d} + x\Big)\,\Big(-1 + \text{Log}\Big[\frac{c}{d} + x\Big]\Big) -$$

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

$$\left(a^2\,\Big(\big(-b\,c + a\,d\big)\,\text{Log}\Big[\frac{c}{d} + x\Big] + d\,(a + b\,x)\,\big(\text{Log}[a + b\,x] - \text{Log}[c + d\,x]\big)\Big)\right)\Bigg/$$

$$\left.\big((b\,c - a\,d)\,(a + b\,x)\big) - 2\,a\,\Big(\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + \text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big)\right)\Bigg)$$

Problem 16: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)}{(a\,g + b\,g\,x)^3}\,\mathrm{d}x$$

Optimal (type 4, 230 leaves, 7 steps) :

$$-\frac{B\,d\,i^2\,(c+d\,x)}{b^2\,g^3\,(a+b\,x)} - \frac{B\,i^2\,(c+d\,x)^2}{4\,b\,g^3\,(a+b\,x)^2} -$$

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

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

Result (type 4, 788 leaves) :

$$\frac{1}{4\,b^3\,g^3}\,i^2\left(-\frac{2\,A\,(b\,c-a\,d)^2}{(a+b\,x)^2}+\frac{8\,A\,d\,(-b\,c+a\,d)}{a+b\,x}+\right.$$

$$4\,A\,d^2\,\text{Log}[a+b\,x] - \left(b^2\,B\,c^2\left(b^2\,c^2-4\,a\,b\,c\,d+a^2\,d^2-2\,b^2\,c\,d\,x-2\,a\,b\,d^2\,x-2\,b^2\,d^2\,x^2+\right.\right.$$

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

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

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

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

$$4\,a^2\,b\,c\,d\,\text{Log}[c+d\,x]+2\,a^3\,d^2\,\text{Log}[c+d\,x]-8\,a\,b^2\,c\,d\,x\,\text{Log}[c+d\,x]+$$

$$\left.4\,a^2\,b\,d^2\,x\,\text{Log}[c+d\,x]-4\,b^3\,c\,d\,x^2\,\text{Log}[c+d\,x]+2\,a\,b^2\,d^2\,x^2\,\text{Log}[c+d\,x]\right)+$$

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

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

$$\left(8\,a\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\Big/$$

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

$$d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])\bigg)-$$

$$4\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\bigg)\bigg)\bigg)$$

Problem 17: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(a\,g + b\,g\,x)^4}\,dx$$

Optimal (type 3, 89 leaves, 2 steps):

$$-\frac{B\,i^2\,(c+d\,x)^3}{9\,(b\,c - a\,d)\,g^4\,(a+b\,x)^3} - \frac{i^2\,(c+d\,x)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{3\,(b\,c - a\,d)\,g^4\,(a+b\,x)^3}$$

Result (type 3, 186 leaves):

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

Problem 24: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{a\,g + b\,g\,x}\,dx$$

Optimal (type 4, 356 leaves, 14 steps):

$$-\frac{5\,B\,d\,(b\,c - a\,d)^2\,i^3\,x}{6\,b^3\,g} - \frac{B\,(b\,c - a\,d)\,i^3\,(c+d\,x)^2}{6\,b^2\,g} - \frac{5\,B\,(b\,c - a\,d)^3\,i^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{6\,b^4\,g} +$$
$$\frac{d\,(b\,c - a\,d)^2\,i^3\,(a+b\,x)\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{b^4\,g} + \frac{(b\,c - a\,d)\,i^3\,(c+d\,x)^2\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{2\,b^2\,g} +$$
$$\frac{i^3\,(c+d\,x)^3\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{3\,b\,g} - \frac{11\,B\,(b\,c - a\,d)^3\,i^3\,\text{Log}[c+d\,x]}{6\,b^4\,g} -$$
$$\frac{(b\,c - a\,d)^3\,i^3\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)\,\text{Log}\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g} + \frac{B\,(b\,c - a\,d)^3\,i^3\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g}$$

Result (type 4, 1004 leaves):

$$\frac{1}{6\,b^4\,g}$$

$$i^3 \left(18\,b^3\,B\,c^3 - 36\,a\,b^2\,B\,c^2\,d + 24\,a^2\,b\,B\,c\,d^2 - 6\,a^3\,B\,d^3 + 18\,A\,b^3\,c^2\,d\,x - 7\,b^3\,B\,c^2\,d\,x - 18\,a\,A\,b^2\,c\,d^2\,x + \right.$$

$$12\,a\,b^2\,B\,c\,d^2\,x + 6\,a^2\,A\,b\,d^3\,x - 5\,a^2\,b\,B\,d^3\,x + 9\,A\,b^3\,c\,d^2\,x^2 - b^3\,B\,c\,d^2\,x^2 - 3\,a\,A\,b^2\,d^3\,x^2 + a\,b^2\,B\,d^3\,x^2 +$$

$$2\,A\,b^3\,d^3\,x^3 + 3\,B\,(b\,c - a\,d)^3\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 18\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right] + 18\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right] -$$

$$6\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right] + 6\,A\,b^3\,c^3\,\text{Log}\,[a+b\,x] - 18\,a\,A\,b^2\,c^2\,d\,\text{Log}\,[a+b\,x] +$$

$$18\,a^2\,A\,b\,c\,d^2\,\text{Log}\,[a+b\,x] - 9\,a^2\,b\,B\,c\,d^2\,\text{Log}\,[a+b\,x] - 6\,a^3\,A\,d^3\,\text{Log}\,[a+b\,x] +$$

$$5\,a^3\,B\,d^3\,\text{Log}\,[a+b\,x] + 6\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x] - 18\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x] +$$

$$18\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x] - 6\,a^3\,B\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x] +$$

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

$$6\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 18\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] -$$

$$18\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 6\,a^3\,B\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$$

$$18\,b^3\,B\,c^2\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 18\,a\,b^2\,B\,c\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 6\,a^2\,b\,B\,d^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$9\,b^3\,B\,c\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 3\,a\,b^2\,B\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 2\,b^3\,B\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$6\,b^3\,B\,c^3\,\text{Log}\,[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 18\,a\,b^2\,B\,c^2\,d\,\text{Log}\,[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$18\,a^2\,b\,B\,c\,d^2\,\text{Log}\,[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 6\,a^3\,B\,d^3\,\text{Log}\,[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$\left. 7\,b^3\,B\,c^3\,\text{Log}\,[c+d\,x] - 3\,a\,b^2\,B\,c^2\,d\,\text{Log}\,[c+d\,x] - 6\,B\,(b\,c - a\,d)^3\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)$$

Problem 25: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(a\,g + b\,g\,x)^2}\,\mathbb{d}x$$

Optimal (type 4, 373 leaves, 11 steps):

$$-\frac{B d^2 (b c - a d) i^3 x}{2 b^3 g^2} - \frac{B (b c - a d)^2 i^3 (c + d x)}{b^3 g^2 (a + b x)} - \frac{B d (b c - a d)^2 i^3 \log\left[\frac{a+b x}{c+d x}\right]}{2 b^4 g^2} +$$

$$\frac{2 d^2 (b c - a d) i^3 (a + b x) \left(A + B \log\left[\frac{e (a+b x)}{c+d x}\right]\right)}{b^4 g^2} - \frac{(b c - a d)^2 i^3 (c + d x) \left(A + B \log\left[\frac{e (a+b x)}{c+d x}\right]\right)}{b^3 g^2 (a + b x)} +$$

$$\frac{d i^3 (c + d x)^2 \left(A + B \log\left[\frac{e (a+b x)}{c+d x}\right]\right)}{2 b^2 g^2} - \frac{5 B d (b c - a d)^2 i^3 \log[c + d x]}{2 b^4 g^2} -$$

$$\frac{3 d (b c - a d)^2 i^3 \left(A + B \log\left[\frac{e (a+b x)}{c+d x}\right]\right) \log\left[1 - \frac{b (c+d x)}{d (a+b x)}\right]}{b^4 g^2} + \frac{3 B d (b c - a d)^2 i^3 \text{PolyLog}\left[2, \frac{b (c+d x)}{d (a+b x)}\right]}{b^4 g^2}$$

Result (type 4, 967 leaves) :

$$\frac{1}{2\,b^4\,g^2}\,i^3\,\Bigg(2\,A\,b\,d^2\,\big(3\,b\,c-2\,a\,d\big)\,x+A\,b^2\,d^3\,x^2-\frac{2\,A\,\big(b\,c-a\,d\big)^3}{a+b\,x}+6\,A\,d\,\big(b\,c-a\,d\big)^2\,\mathrm{Log}[a+b\,x]-$$

$$\Bigg(2\,b^3\,B\,c^3\,\Big(-d\,\big(a+b\,x\big)\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]+d\,\big(a+b\,x\big)\,\mathrm{Log}\Big[\frac{d\,\big(a+b\,x\big)}{-b\,c+a\,d}\Big]+$$

$$\big(b\,c-a\,d\big)\,\Big[1+\mathrm{Log}\Big[\frac{e\,\big(a+b\,x\big)}{c+d\,x}\Big]\Big]\Big)\Bigg)\Big/\big(\big(b\,c-a\,d\big)\,\big(a+b\,x\big)\big)+$$

$$B\,d^3\,\Bigg(4\,a^2-\frac{4\,a\,b\,c}{d}+a\,b\,x-\frac{b^2\,c\,x}{d}+\frac{2\,a^3}{a+b\,x}+3\,a^2\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2+\frac{4\,a\,b\,c\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]}{d}-$$

$$a^2\,\mathrm{Log}[a+b\,x]+\frac{2\,a^3\,d\,\mathrm{Log}[a+b\,x]}{b\,c-a\,d}+6\,a^2\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}[a+b\,x]-2\,a^2\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]$$

$$\big(2+3\,\mathrm{Log}[a+b\,x]\big)-6\,a^2\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}\Big[\frac{d\,\big(a+b\,x\big)}{-b\,c+a\,d}\Big]-4\,a\,b\,x\,\mathrm{Log}\Big[\frac{e\,\big(a+b\,x\big)}{c+d\,x}\Big]+$$

$$b^2\,x^2\,\mathrm{Log}\Big[\frac{e\,\big(a+b\,x\big)}{c+d\,x}\Big]+\frac{2\,a^3\,\mathrm{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]}{a+b\,x}+6\,a^2\,\mathrm{Log}[a+b\,x]\,\mathrm{Log}\Big[\frac{e\,\big(a+b\,x\big)}{c+d\,x}\Big]+$$

$$\frac{b^2\,c^2\,\mathrm{Log}[c+d\,x]}{d^2}+\frac{2\,a^3\,d\,\mathrm{Log}[c+d\,x]}{-b\,c+a\,d}-6\,a^2\,\mathrm{PolyLog}\Big[2,\frac{b\,\big(c+d\,x\big)}{b\,c-a\,d}\Big]\Bigg)+$$

$$3\,b^2\,B\,c^2\,d\,\Bigg(\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2+\frac{2\,a\,\big(1+\mathrm{Log}\Big[\frac{a}{b}+x\Big]\big)}{a+b\,x}+2\,\Big(\frac{a}{a+b\,x}+\mathrm{Log}[a+b\,x]\Big)$$

$$\Big(-\mathrm{Log}\Big[\frac{a}{b}+x\Big]+\mathrm{Log}\Big[\frac{c}{d}+x\Big]+\mathrm{Log}\Big[\frac{e\,\big(a+b\,x\big)}{c+d\,x}\Big]\Big)+$$

$$\Big(2\,a\,\big(\big(-b\,c+a\,d\big)\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]+d\,\big(a+b\,x\big)\,\big(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x]\big)\big)\Big)\Big/$$

$$\big(\big(b\,c-a\,d\big)\,\big(a+b\,x\big)\big)-2\,\Big(\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}\Big[\frac{d\,\big(a+b\,x\big)}{-b\,c+a\,d}\Big]+\mathrm{PolyLog}\Big[2,\frac{b\,\big(c+d\,x\big)}{b\,c-a\,d}\Big]\Big)\Bigg)-$$

$$6\,b\,B\,c\,d^2\,\Bigg(-\big(a+b\,x\big)\,\big(-1+\mathrm{Log}\Big[\frac{a}{b}+x\Big]\big)+a\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2+\frac{a^2\,\big(1+\mathrm{Log}\Big[\frac{a}{b}+x\Big]\big)}{a+b\,x}+$$

$$b\,\Big(\frac{c}{d}+x\Big)\,\big(-1+\mathrm{Log}\Big[\frac{c}{d}+x\Big]\big)-$$

$$\Big(b\,x-\frac{a^2}{a+b\,x}-2\,a\,\mathrm{Log}[a+b\,x]\Big)\,\Big(-\mathrm{Log}\Big[\frac{a}{b}+x\Big]+\mathrm{Log}\Big[\frac{c}{d}+x\Big]+\mathrm{Log}\Big[\frac{e\,\big(a+b\,x\big)}{c+d\,x}\Big]\Big)+$$

$$\Big(a^2\,\big(\big(-b\,c+a\,d\big)\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]+d\,\big(a+b\,x\big)\,\big(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x]\big)\big)\Big)\Big/$$

$$\big(\big(b\,c-a\,d\big)\,\big(a+b\,x\big)\big)-2\,a\,\Big(\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}\Big[\frac{d\,\big(a+b\,x\big)}{-b\,c+a\,d}\Big]+\mathrm{PolyLog}\Big[2,\frac{b\,\big(c+d\,x\big)}{b\,c-a\,d}\Big]\Bigg)\Bigg)\Bigg)$$

Problem 26: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(a\,g + b\,g\,x)^3}\, dx$$

Optimal (type 4, 345 leaves, 9 steps):

$$-\frac{2\,B\,d\,(b\,c-a\,d)\,i^3\,(c+d\,x)}{b^3\,g^3\,(a+b\,x)} - \frac{B\,(b\,c-a\,d)\,i^3\,(c+d\,x)^2}{4\,b^2\,g^3\,(a+b\,x)^2} +$$

$$\frac{d^3\,i^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{b^4\,g^3} - \frac{2\,d\,(b\,c-a\,d)\,i^3\,(c+d\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{b^3\,g^3\,(a+b\,x)} -$$

$$\frac{(b\,c-a\,d)\,i^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{2\,b^2\,g^3\,(a+b\,x)^2} - \frac{B\,d^2\,(b\,c-a\,d)\,i^3\,\text{Log}[c+d\,x]}{b^4\,g^3} -$$

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

Result (type 4, 1170 leaves):

$$\frac{1}{4\,b^4\,g^3}\,i^3\,\left(4\,A\,b\,d^3\,x - \frac{2\,A\,(b\,c-a\,d)^3}{(a+b\,x)^2} - \frac{12\,A\,d\,(b\,c-a\,d)^2}{a+b\,x} + 12\,A\,d^2\,(b\,c-a\,d)\,\text{Log}[a+b\,x] - \right.$$

$$\left(b^3\,B\,c^3\,\left(b^2\,c^2 - 4\,a\,b\,c\,d + a^2\,d^2 - 2\,b^2\,c\,d\,x - 2\,a\,b\,d^2\,x - 2\,b^2\,d^2\,x^2 + \right.\right.$$

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

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

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

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

$$4\,a^2\,b\,c\,d\,\text{Log}[c+d\,x] + 2\,a^3\,d^2\,\text{Log}[c+d\,x] - 8\,a\,b^2\,c\,d\,x\,\text{Log}[c+d\,x] +$$

$$\left.4\,a^2\,b\,d^2\,x\,\text{Log}[c+d\,x] - 4\,b^3\,c\,d\,x^2\,\text{Log}[c+d\,x] + 2\,a\,b^2\,d^2\,x^2\,\text{Log}[c+d\,x]\right) +$$

$$3\,b\,B\,c\,d^2\,\left(2\,\text{Log}\left[\frac{a}{b}+x\right]^2 + \frac{8\,a\,\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{a+b\,x} - \frac{a^2\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{(a+b\,x)^2} + \right.$$

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

$$\left.\left(8\,a\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,(\text{Log}[a+b\,x] - \text{Log}[c+d\,x])\right)\right)\right)\Big/$$

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

$$d\,(a + b\,x)\,\Big(b\,c - a\,d + d\,(a + b\,x)\,\text{Log}[a + b\,x] - d\,(a + b\,x)\,\text{Log}[c + d\,x]\Big)\Bigg) -$$

$$4\,\Bigg(\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + \text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Bigg)\Bigg) -$$

$$B\,d^3 \Bigg(-4\,(a + b\,x)\,\Big(-1 + \text{Log}\Big[\frac{a}{b} + x\Big]\Big) + 6\,a\,\text{Log}\Big[\frac{a}{b} + x\Big]^2 + \frac{12\,a^2\,\Big(1 + \text{Log}\Big[\frac{a}{b} + x\Big]\Big)}{a + b\,x} -$$

$$\frac{a^3\,\Big(1 + 2\,\text{Log}\Big[\frac{a}{b} + x\Big]\Big)}{(a + b\,x)^2} + 4\,b\,\Big(\frac{c}{d} + x\Big)\,\Big(-1 + \text{Log}\Big[\frac{c}{d} + x\Big]\Big) + 2$$

$$\Bigg(-2\,b\,x + \frac{a^2\,(5\,a + 6\,b\,x)}{(a + b\,x)^2} + 6\,a\,\text{Log}[a + b\,x]\Bigg)\,\Bigg(-\text{Log}\Big[\frac{a}{b} + x\Big] + \text{Log}\Big[\frac{c}{d} + x\Big] + \text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Bigg) +$$

$$\Bigg(12\,a^2\,\Big(\big(-b\,c + a\,d\big)\,\text{Log}\Big[\frac{c}{d} + x\Big] + d\,(a + b\,x)\,\big(\text{Log}[a + b\,x] - \text{Log}[c + d\,x]\big)\Big)\Bigg)\Bigg/$$

$$\Big((b\,c - a\,d)\,(a + b\,x)\Big) + \frac{1}{(a + b\,x)^2} 2\,a^3 \Bigg(\text{Log}\Big[\frac{c}{d} + x\Big] + \frac{1}{(b\,c - a\,d)^2}$$

$$d\,(a + b\,x)\,\Big(b\,c - a\,d + d\,(a + b\,x)\,\text{Log}[a + b\,x] - d\,(a + b\,x)\,\text{Log}[c + d\,x]\Big)\Bigg) -$$

$$12\,a\,\Bigg(\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + \text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Bigg)\Bigg)\Bigg)$$

Problem 27: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)}{(a\,g + b\,g\,x)^4}\,dx$$

Optimal (type 4, 310 leaves, 9 steps):

$$-\frac{B\,d^2\,i^3\,(c + d\,x)}{b^3\,g^4\,(a + b\,x)} - \frac{B\,d\,i^3\,(c + d\,x)^2}{4\,b^2\,g^4\,(a + b\,x)^2} - \frac{B\,i^3\,(c + d\,x)^3}{9\,b\,g^4\,(a + b\,x)^3} - \frac{d^2\,i^3\,(c + d\,x)\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)}{b^3\,g^4\,(a + b\,x)} -$$

$$\frac{d\,i^3\,(c + d\,x)^2\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)}{2\,b^2\,g^4\,(a + b\,x)^2} - \frac{i^3\,(c + d\,x)^3\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)}{3\,b\,g^4\,(a + b\,x)^3} -$$

$$\frac{d^3\,i^3\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\Big)\,\text{Log}\Big[1 - \frac{b\,(c + d\,x)}{d\,(a + b\,x)}\Big]}{b^4\,g^4} + \frac{B\,d^3\,i^3\,\text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{d\,(a + b\,x)}\Big]}{b^4\,g^4}$$

Result (type 4, 1407 leaves):

$$\frac{1}{36\,b^4\,g^4}$$

$$i^3 \left(-\frac{12 A (b c - a d)^3}{(a + b x)^3} - \frac{54 A d (b c - a d)^2}{(a + b x)^2} + \frac{108 A d^2 (-b c + a d)}{a + b x} + 36 A d^3 \text{Log}[a + b x] - \left(2 b^3 B c^3 \right. \right.$$

$$\left(2 b^3 c^3 - 9 a b^2 c^2 d + 18 a^2 b c d^2 - 2 a^3 d^3 - 3 b^3 c^2 d x + 18 a b^2 c d^2 x + 12 a^2 b d^3 x + 6 b^3 c d^2 x^2 + \right.$$

$$21 a b^2 d^3 x^2 + 9 b^3 d^3 x^3 - 6 d^3 (a + b x)^3 \text{Log}\left[\frac{c}{d} + x\right] + 6 d^3 (a + b x)^3 \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] +$$

$$6 b^3 c^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] - 18 a b^2 c^2 d \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$18 a^2 b c d^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] - 6 a^3 d^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)\right) \Big/ \left((b c - a d)^3 (a + b x)^3\right) +$$

$$3 b^2 B c^2 d \left(-\frac{9 \left(1 + 2 \text{Log}\left[\frac{a}{b} + x\right]\right)}{(a + b x)^2} + \frac{4 a \left(1 + 3 \text{Log}\left[\frac{a}{b} + x\right]\right)}{(a + b x)^3} + \right.$$

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

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

$$\frac{18 \left(\text{Log}\left[\frac{c}{d} + x\right] + \frac{d (a+b x) (b c-a d+d (a+b x) \text{Log}[a+b x]-d (a+b x) \text{Log}[c+d x])}{(b c-a d)^2}\right)}{(a + b x)^2}\right) -$$

$$6 b B c d^2 \left(\frac{18 \left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{a + b x} - \frac{9 a \left(1 + 2 \text{Log}\left[\frac{a}{b} + x\right]\right)}{(a + b x)^2} + \frac{2 a^2 \left(1 + 3 \text{Log}\left[\frac{a}{b} + x\right]\right)}{(a + b x)^3} - \right.$$

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

$$\left(18 \left((-b c + a d) \text{Log}\left[\frac{c}{d} + x\right] + d (a + b x) \left(\text{Log}[a + b x] - \text{Log}[c + d x]\right)\right)\right) \Big/$$

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

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

$$\frac{1}{(a + b x)^2} 18 a \left(\text{Log}\left[\frac{c}{d} + x\right] + \frac{1}{(b c - a d)^2} d (a + b x)\right.$$

$$\left(b c - a d + d (a + b x) \text{Log}[a + b x] - d (a + b x) \text{Log}[c + d x]\right)\right) +$$

$$B d^3 \left(18 \text{Log}\left[\frac{a}{b} + x\right]^2 + \frac{108 a \left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{a + b x} - \frac{27 a^2 \left(1 + 2 \text{Log}\left[\frac{a}{b} + x\right]\right)}{(a + b x)^2} + \right.$$

$$\frac{4\, a^3 \left(1 + 3\, \mathrm{Log}\left[\frac{a}{b} + x\right]\right)}{(a + b\, x)^3} + 6 \left(\frac{a\left(11\, a^2 + 27\, a\, b\, x + 18\, b^2\, x^2\right)}{(a + b\, x)^3} + 6\, \mathrm{Log}\,[a + b\, x]\right)$$

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

$$\left(108\, a\left((-b\, c + a\, d)\,\mathrm{Log}\left[\frac{c}{d} + x\right] + d\,(a + b\, x)\,(\mathrm{Log}\,[a + b\, x] - \mathrm{Log}\,[c + d\, x])\right)\right) \Big/$$

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

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

$$\frac{1}{(a + b\, x)^2}\, 54\, a^2 \left(\mathrm{Log}\left[\frac{c}{d} + x\right] + \frac{1}{(b\, c - a\, d)^2}\, d\,(a + b\, x)\right.$$

$$(b\, c - a\, d + d\,(a + b\, x)\,\mathrm{Log}\,[a + b\, x] - d\,(a + b\, x)\,\mathrm{Log}\,[c + d\, x]) \Bigg) -$$

$$36\left(\mathrm{Log}\left[\frac{c}{d} + x\right]\mathrm{Log}\left[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\right] + \mathrm{PolyLog}\left[2, \frac{b\,(c + d\, x)}{b\, c - a\, d}\right]\right)\Bigg)\Bigg)$$

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

$$\int \frac{(c\, i + d\, i\, x)^3 \left(A + B\, \mathrm{Log}\left[\frac{e\,(a + b\, x)}{c + d\, x}\right]\right)}{(a\, g + b\, g\, x)^5}\, dx$$

Optimal (type 3, 89 leaves, 2 steps):

$$-\frac{B\, i^3\,(c + d\, x)^4}{16\,(b\, c - a\, d)\, g^5\,(a + b\, x)^4} - \frac{i^3\,(c + d\, x)^4 \left(A + B\, \mathrm{Log}\left[\frac{e\,(a + b\, x)}{c + d\, x}\right]\right)}{4\,(b\, c - a\, d)\, g^5\,(a + b\, x)^4}$$

Result (type 3, 248 leaves):

$$\frac{1}{16\, b^4\,(b\, c - a\, d)\, g^5\,(a + b\, x)^4}$$

$$i^3 \left(-(4\, A + B)\,(b\, c - a\, d)^4 + 4\,(4\, A + B)\, d\,(-b\, c + a\, d)^3\,(a + b\, x) - 6\,(4\, A + B)\, d^2\,(b\, c - a\, d)^2\,(a + b\, x)^2 + \right.$$

$$4\,(4\, A + B)\, d^3\,(-b\, c + a\, d)\,(a + b\, x)^3 - 4\, B\, d^4\,(a + b\, x)^4\, \mathrm{Log}\,[a + b\, x] -$$

$$4\, B\,(b\, c - a\, d)\left((b\, c - a\, d)^3 + 4\, d\,(b\, c - a\, d)^2\,(a + b\, x) + 6\, d^2\,(b\, c - a\, d)\,(a + b\, x)^2 + 4\, d^3\,(a + b\, x)^3\right)$$

$$\mathrm{Log}\left[\frac{e\,(a + b\, x)}{c + d\, x}\right] + 4\, B\, d^4\,(a + b\, x)^4\, \mathrm{Log}\,[c + d\, x]\Bigg)$$

Problem 31: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{c\,i + d\,i\,x}\, dx$$

Optimal (type 4, 252 leaves, 6 steps):

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

$$\frac{(b\,c-a\,d)^2\,g^3\,(a+b\,x)\left(6\,A+5\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{6\,d^3\,i} +$$

$$\frac{(b\,c-a\,d)^3\,g^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\left(6\,A+11\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{6\,d^4\,i} + \frac{B\,(b\,c-a\,d)^3\,g^3\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i}$$

Result (type 4, 947 leaves):

$$\frac{1}{6\,d^4\,i}\,g^3\,\Big(6\,b^3\,B\,c^3 - 24\,a\,b^2\,B\,c^2\,d + 36\,a^2\,b\,B\,c\,d^2 - 18\,a^3\,B\,d^3 + 6\,A\,b^3\,c^2\,d\,x + 5\,b^3\,B\,c^2\,d\,x - 18\,a\,A\,b^2\,c\,d^2\,x -$$

$$12\,a\,b^2\,B\,c\,d^2\,x + 18\,a^2\,A\,b\,d^3\,x + 7\,a^2\,b\,B\,d^3\,x - 3\,A\,b^3\,c\,d^2\,x^2 - b^3\,B\,c\,d^2\,x^2 + 9\,a\,A\,b^2\,d^3\,x^2 + a\,b^2\,B\,d^3\,x^2 +$$

$$2\,A\,b^3\,d^3\,x^3 - 6\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right] + 18\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right] - 18\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right] +$$

$$3\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 9\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2 + 9\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 3\,a^3\,B\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2 +$$

$$3\,a^2\,b\,B\,c\,d^2\,\text{Log}[a+b\,x] - 7\,a^3\,B\,d^3\,\text{Log}[a+b\,x] + 6\,b^3\,B\,c^2\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$18\,a\,b^2\,B\,c\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 18\,a^2\,b\,B\,d^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 3\,b^3\,B\,c\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$9\,a\,b^2\,B\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 2\,b^3\,B\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 6\,A\,b^3\,c^3\,\text{Log}[c+d\,x] -$$

$$5\,b^3\,B\,c^3\,\text{Log}[c+d\,x] + 18\,a\,A\,b^2\,c^2\,d\,\text{Log}[c+d\,x] + 9\,a\,b^2\,B\,c^2\,d\,\text{Log}[c+d\,x] -$$

$$18\,a^2\,A\,b\,c\,d^2\,\text{Log}[c+d\,x] + 6\,a^3\,A\,d^3\,\text{Log}[c+d\,x] - 6\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] +$$

$$18\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] - 18\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] +$$

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

$$18\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x] - 18\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x] +$$

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

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

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

Problem 32: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^2\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{c\,i + d\,i\,x}\,dx$$

Optimal (type 4, 198 leaves, 5 steps):

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

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

Result (type 4, 575 leaves):

$$\frac{1}{2\,d^3\,i}\,g^2\,\Bigg(-2\,b^2\,B\,c^2 + 6\,a\,b\,B\,c\,d - 4\,a^2\,B\,d^2 - 2\,A\,b^2\,c\,d\,x - b^2\,B\,c\,d\,x +$$

$$4\,a\,A\,b\,d^2\,x + a\,b\,B\,d^2\,x + A\,b^2\,d^2\,x^2 + 2\,b^2\,B\,c^2\,\text{Log}\left[\frac{c}{d} + x\right] - 4\,a\,b\,B\,c\,d\,\text{Log}\left[\frac{c}{d} + x\right] -$$

$$b^2\,B\,c^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 + 2\,a\,b\,B\,c\,d\,\text{Log}\left[\frac{c}{d} + x\right]^2 - a^2\,B\,d^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 - a^2\,B\,d^2\,\text{Log}\,[a + b\,x] -$$

$$2\,b^2\,B\,c\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 4\,a\,b\,B\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + b^2\,B\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$2\,A\,b^2\,c^2\,\text{Log}\,[c + d\,x] + b^2\,B\,c^2\,\text{Log}\,[c + d\,x] - 4\,a\,A\,b\,c\,d\,\text{Log}\,[c + d\,x] + 2\,a^2\,A\,d^2\,\text{Log}\,[c + d\,x] +$$

$$2\,b^2\,B\,c^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\,[c + d\,x] - 4\,a\,b\,B\,c\,d\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\,[c + d\,x] +$$

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

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

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

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

Problem 33: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{c\,i + d\,i\,x}\,dx$$

Optimal (type 4, 125 leaves, 4 steps):

$$\frac{g\,(a+b\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{d\,i} +$$

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

Result (type 4, 291 leaves):

$$\frac{1}{2\,d^2\,i}\,g\,\bigg(2\,b\,B\,c - 2\,a\,B\,d + 2\,A\,b\,d\,x - 2\,b\,B\,c\,\text{Log}\Big[\frac{c}{d}+x\Big] +$$

$$b\,B\,c\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 - a\,B\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 + 2\,b\,B\,d\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 2\,A\,b\,c\,\text{Log}[c+d\,x] +$$

$$2\,a\,A\,d\,\text{Log}[c+d\,x] - 2\,b\,B\,c\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] + 2\,a\,B\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] -$$

$$2\,b\,B\,c\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] + 2\,a\,B\,d\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] +$$

$$2\,B\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\bigg(a\,d + (b\,c - a\,d)\,\text{Log}[c+d\,x] + (-b\,c+a\,d)\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\bigg) +$$

$$(-2\,b\,B\,c + 2\,a\,B\,d)\,\text{PolyLog}\Big[2,\ \frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\bigg)$$

Problem 39: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^3\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)}{(c\,i + d\,i\,x)^2}\,\mathbb{d}x$$

Optimal (type 4, 341 leaves, 9 steps):

$$\frac{3\,B\,(b\,c - a\,d)^2\,g^3\,(a+b\,x)}{d^3\,i^2\,(c+d\,x)} - \frac{(6\,A + 5\,B)\,(b\,c - a\,d)^2\,g^3\,(a+b\,x)}{2\,d^3\,i^2\,(c+d\,x)} -$$

$$\frac{3\,B\,(b\,c - a\,d)^2\,g^3\,(a+b\,x)\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]}{d^3\,i^2\,(c+d\,x)} + \frac{g^3\,(a+b\,x)^3\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)}{2\,d\,i^2\,(c+d\,x)} -$$

$$\frac{(b\,c - a\,d)\,g^3\,(a+b\,x)^2\,\Big(3\,A + B + 3\,B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)}{2\,d^2\,i^2\,(c+d\,x)} -$$

$$\frac{b\,(b\,c - a\,d)^2\,g^3\,\text{Log}\Big[\frac{b\,c-a\,d}{b\,(c+d\,x)}\Big]\,\Big(6\,A + 5\,B + 6\,B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)}{2\,d^4\,i^2} -$$

$$\frac{3\,b\,B\,(b\,c - a\,d)^2\,g^3\,\text{PolyLog}\Big[2,\ \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^4\,i^2}$$

Result (type 4, 956 leaves):

$$\frac{1}{2\,d^4\,i^2}\,g^3\,\left(-2\,A\,b^2\,d\,\left(2\,b\,c-3\,a\,d\right)\,x+A\,b^3\,d^2\,x^2+\frac{2\,A\,\left(b\,c-a\,d\right)^3}{c+d\,x}+\right.$$

$$6\,A\,b\,\left(b\,c-a\,d\right)^2\,\text{Log}[c+d\,x]+\left(2\,a^3\,B\,d^3\,\left(b\,c-a\,d+b\,\left(c+d\,x\right)\,\text{Log}\left[\frac{a}{b}+x\right]+\right.\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 40: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(c\,i + d\,i\,x)^2}\,dx$$

Optimal (type 4, 260 leaves, 8 steps):

$$-\frac{2\,B\,(b\,c - a\,d)\,g^2\,(a + b\,x)}{d^2\,i^2\,(c + d\,x)} + \frac{(2\,A + B)\,(b\,c - a\,d)\,g^2\,(a + b\,x)}{d^2\,i^2\,(c + d\,x)} +$$

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

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

Result (type 4, 588 leaves):

$$\frac{1}{d^3\,i^2}\,g^2$$

$$\left(A\,b^2\,d\,x - \frac{A\,(b\,c - a\,d)^2}{c + d\,x} + 2\,A\,b\,(-b\,c + a\,d)\,\text{Log}[c + d\,x] + \left(a^2\,B\,d^2\,\left(b\,c - a\,d + b\,(c + d\,x)\,\text{Log}\left[\frac{a}{b} + x\right] + \right.\right.\right.$$

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

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

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

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

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

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

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

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

Problem 41: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(c\,i + d\,i\,x)^2}\, dx$$

Optimal (type 4, 160 leaves, 7 steps):

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

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

Result (type 4, 333 leaves):

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

$$g\left(\frac{2\,A\,(b\,c - a\,d)}{c+d\,x} + 2\,A\,b\,\text{Log}[c+d\,x] + \left(2\,a\,B\,d\left(b\,c - a\,d + b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b} + x\right] + (-b\,c + a\,d)\,\text{Log}\left[\right.\right.\right.$$

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

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

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

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

Problem 47: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^3\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(c\,i + d\,i\,x)^3}\, dx$$

Optimal (type 4, 361 leaves, 9 steps):

$$-\frac{3\,B\,(b\,c - a\,d)\,g^3\,(a+b\,x)^2}{4\,d^2\,i^3\,(c+d\,x)^2} - \frac{3\,b\,B\,(b\,c - a\,d)\,g^3\,(a+b\,x)}{d^3\,i^3\,(c+d\,x)} +$$

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

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

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

Result (type 4, 1161 leaves) :

$$\frac{1}{4\,d^4\,i^3}\,g^3\,\left(4\,A\,b^3\,d\,x+\frac{2\,A\,(b\,c-a\,d)^3}{(c+d\,x)^2}-\frac{12\,A\,b\,(b\,c-a\,d)^2}{c+d\,x}+12\,A\,b^2\,(-b\,c+a\,d)\,\text{Log}[c+d\,x]-\right.$$

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

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

$$2\,b^2\,c^3\,\text{Log}[c+d\,x]-4\,a\,b\,c^2\,d\,\text{Log}[c+d\,x]+4\,b^2\,c^2\,d\,x\,\text{Log}[c+d\,x]-$$

$$\left.8\,a\,b\,c\,d^2\,x\,\text{Log}[c+d\,x]+2\,b^2\,c\,d^2\,x^2\,\text{Log}[c+d\,x]-4\,a\,b\,d^3\,x^2\,\text{Log}[c+d\,x]\right)-$$

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

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

$$\left.\left.4\,b^2\,c\,d\,x\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,b^2\,d^2\,x^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left((b\,c-a\,d)^2\,(c+d\,x)^2\right)+$$

$$3\,a\,b^2\,B\,d\,\left(-2\,\text{Log}\left[\frac{c}{d}+x\right]^2-\frac{8\,c\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{c+d\,x}+\frac{c^2\,\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{(c+d\,x)^2}+\right.$$

$$8\,c\,\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]}{c+d\,x}+\frac{b\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)}{-b\,c+a\,d}\right)+$$

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

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

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

$$4\,\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Bigg)-$$

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

$$6\,c\,\text{Log}\left[\frac{c}{d}+x\right]^2-\frac{12\,c^2\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{c+d\,x}+\frac{c^3\,\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{(c+d\,x)^2}-$$

$$12\,c^2\,\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{c+d\,x}+\frac{b\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)}{b\,c-a\,d}\right)+$$

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

$$\left(-2\,d\,x+\frac{c^2\,(5\,c+6\,d\,x)}{(c+d\,x)^2}+6\,c\,\text{Log}[c+d\,x]\right)+\frac{1}{(c+d\,x)^2}2\,c^3\left(-\text{Log}\left[\frac{a}{b}+x\right]+\frac{1}{(b\,c-a\,d)^2}\right.$$

$$b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}[a+b\,x]-b\,(c+d\,x)\,\text{Log}[c+d\,x])\right)+$$

$$12\,c\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Bigg)\Bigg)$$

Problem 48: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{(c\,i+d\,i\,x)^3}\,dx$$

Optimal (type 4, 251 leaves, 8 steps) :

$$\frac{B\,g^2\,(a+b\,x)^2}{4\,d\,i^3\,(c+d\,x)^2}-\frac{A\,b\,g^2\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)}+\frac{b\,B\,g^2\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)}-$$

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

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

Result (type 4, 790 leaves) :

$$\frac{1}{4\,d^3\,i^3}\,g^2\left(-\frac{2\,A\,(b\,c-a\,d)^2}{(c+d\,x)^2}+\frac{8\,A\,b\,(b\,c-a\,d)}{c+d\,x}+4\,A\,b^2\,\text{Log}[c+d\,x]-\right.$$

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

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

$$2\,b^2\,c^3\,\text{Log}[c+d\,x]-4\,a\,b\,c^2\,d\,\text{Log}[c+d\,x]+4\,b^2\,c^2\,d\,x\,\text{Log}[c+d\,x]-$$

$$\left.8\,a\,b\,c\,d^2\,x\,\text{Log}[c+d\,x]+2\,b^2\,c\,d^2\,x^2\,\text{Log}[c+d\,x]-4\,a\,b\,d^3\,x^2\,\text{Log}[c+d\,x]\right)-$$

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

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

$$\left.\left.4\,b^2\,c\,d\,x\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,b^2\,d^2\,x^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left((b\,c-a\,d)^2\,(c+d\,x)^2\right)+$$

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

$$8\,c\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]}{c+d\,x}+\frac{b\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)}{-b\,c+a\,d}\right)+$$

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

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

$$b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}[a+b\,x]-b\,(c+d\,x)\,\text{Log}[c+d\,x])\Big)+$$

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

Problem 55: Result more than twice size of optimal antiderivative.

$$\int(a\,g+b\,g\,x)^3\,(c\,i+d\,i\,x)\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2\,dx$$

Optimal (type 4, 539 leaves, 11 steps):

$$\frac{3\,B^2\,(b\,c - a\,d)^4\,g^3\,i\,x}{10\,b\,d^3} - \frac{3\,B^2\,(b\,c - a\,d)^3\,g^3\,i\,(c + d\,x)^2}{20\,d^4} + \frac{b\,B^2\,(b\,c - a\,d)^2\,g^3\,i\,(c + d\,x)^3}{30\,d^4} -$$

$$\frac{B\,(b\,c - a\,d)^2\,g^3\,i\,(a + b\,x)^3\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b^2\,d} - \frac{B\,(b\,c - a\,d)\,g^3\,i\,(a + b\,x)^4\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,b^2} +$$

$$\frac{(b\,c - a\,d)\,g^3\,i\,(a + b\,x)^4\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{20\,b^2} + \frac{g^3\,i\,(a + b\,x)^4\,(c + d\,x)\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{5\,b} +$$

$$\frac{B\,(b\,c - a\,d)^3\,g^3\,i\,(a + b\,x)^2\,\left(3\,A + B + 3\,B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b^2\,d^2} -$$

$$\frac{B\,(b\,c - a\,d)^4\,g^3\,i\,(a + b\,x)\,\left(6\,A + 5\,B + 6\,B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b^2\,d^3} -$$

$$\frac{B\,(b\,c - a\,d)^5\,g^3\,i\,\mathrm{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(6\,A + 11\,B + 6\,B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b^2\,d^4} -$$

$$\frac{B^2\,(b\,c - a\,d)^5\,g^3\,i\,\mathrm{Log}[c + d\,x]}{10\,b^2\,d^4} - \frac{B^2\,(b\,c - a\,d)^5\,g^3\,i\,\mathrm{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{10\,b^2\,d^4}$$

Result (type 4, 3093 leaves):

$$\frac{1}{60\,b^2\,d^4}$$

$g^3\,i\,\Big(-6\,b^5\,B^2\,c^5 + 36\,a\,b^4\,B^2\,c^4\,d - 90\,a^2\,b^3\,B^2\,c^3\,d^2 + 90\,a^3\,b^2\,B^2\,c^2\,d^3 - 24\,a^4\,b\,B^2\,c\,d^4 - 6\,a^5\,B^2\,d^5 - 6\,A\,b^5\,B$

$\qquad c^4\,d\,x + b^5\,B^2\,c^4\,d\,x + 30\,a\,A\,b^4\,B\,c^3\,d^2\,x - 8\,a\,b^4\,B^2\,c^3\,d^2\,x - 60\,a^2\,A\,b^3\,B\,c^2\,d^3\,x + 24\,a^2\,b^3\,B^2\,c^2\,d^3\,x +$

$\qquad 60\,a^3\,A^2\,b^2\,c\,d^4\,x + 30\,a^3\,A\,b^2\,B\,c\,d^4\,x - 28\,a^3\,b^2\,B^2\,c\,d^4\,x + 6\,a^4\,A\,b\,B\,d^5\,x + 11\,a^4\,b\,B^2\,d^5\,x +$

$\qquad 3\,A\,b^5\,B\,c^3\,d^2\,x^2 - 2\,b^5\,B^2\,c^3\,d^2\,x^2 - 15\,a\,A\,b^4\,B\,c^2\,d^3\,x^2 + 12\,a\,b^4\,B^2\,c^2\,d^3\,x^2 + 90\,a^2\,A^2\,b^3\,c\,d^4\,x^2 -$

$\qquad 15\,a^2\,A\,b^3\,B\,c\,d^4\,x^2 - 18\,a^2\,b^3\,B^2\,c\,d^4\,x^2 + 30\,a^3\,A^2\,b^2\,d^5\,x^2 + 27\,a^3\,A\,b^2\,B\,d^5\,x^2 + 8\,a^3\,b^2\,B^2\,d^5\,x^2 -$

$\qquad 2\,A\,b^5\,B\,c^2\,d^3\,x^3 + 2\,b^5\,B^2\,c^2\,d^3\,x^3 + 60\,a\,A^2\,b^4\,c\,d^4\,x^3 - 20\,a\,A\,b^4\,B\,c\,d^4\,x^3 - 4\,a\,b^4\,B^2\,c\,d^4\,x^3 +$

$\qquad 60\,a^2\,A^2\,b^3\,d^5\,x^3 + 22\,a^2\,A\,b^3\,B\,d^5\,x^3 + 2\,a^2\,b^3\,B^2\,d^5\,x^3 + 15\,A^2\,b^5\,c\,d^4\,x^4 - 6\,A\,b^5\,B\,c\,d^4\,x^4 +$

$\qquad 45\,a\,A^2\,b^4\,d^5\,x^4 + 6\,a\,A\,b^4\,B\,d^5\,x^4 + 12\,A^2\,b^5\,d^5\,x^5 - 6\,a\,b^4\,B^2\,c^4\,d\,\mathrm{Log}\left[\frac{a}{b} + x\right] +$

$\qquad 30\,a^2\,b^3\,B^2\,c^3\,d^2\,\mathrm{Log}\left[\frac{a}{b} + x\right] - 60\,a^3\,b^2\,B^2\,c^2\,d^3\,\mathrm{Log}\left[\frac{a}{b} + x\right] + 30\,a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}\left[\frac{a}{b} + x\right] +$

$\qquad 6\,a^5\,B^2\,d^5\,\mathrm{Log}\left[\frac{a}{b} + x\right] + 15\,a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}\left[\frac{a}{b} + x\right]^2 - 3\,a^5\,B^2\,d^5\,\mathrm{Log}\left[\frac{a}{b} + x\right]^2 + 6\,b^5\,B^2\,c^5\,\mathrm{Log}\left[\frac{c}{d} + x\right] -$

$\qquad 30\,a\,b^4\,B^2\,c^4\,d\,\mathrm{Log}\left[\frac{c}{d} + x\right] + 60\,a^2\,b^3\,B^2\,c^3\,d^2\,\mathrm{Log}\left[\frac{c}{d} + x\right] - 30\,a^3\,b^2\,B^2\,c^2\,d^3\,\mathrm{Log}\left[\frac{c}{d} + x\right] -$

$\qquad 6\,a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}\left[\frac{c}{d} + x\right] - 3\,b^5\,B^2\,c^5\,\mathrm{Log}\left[\frac{c}{d} + x\right]^2 + 15\,a\,b^4\,B^2\,c^4\,d\,\mathrm{Log}\left[\frac{c}{d} + x\right]^2 -$

$\qquad 30\,a^2\,b^3\,B^2\,c^3\,d^2\,\mathrm{Log}\left[\frac{c}{d} + x\right]^2 + 30\,a^3\,b^2\,B^2\,c^2\,d^3\,\mathrm{Log}\left[\frac{c}{d} + x\right]^2 - 3\,a^2\,b^3\,B^2\,c^3\,d^2\,\mathrm{Log}[a + b\,x] +$

$\qquad 13\,a^3\,b^2\,B^2\,c^2\,d^3\,\mathrm{Log}[a + b\,x] + 30\,a^4\,A\,b\,B\,c\,d^4\,\mathrm{Log}[a + b\,x] + a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}[a + b\,x] -$

$\qquad 6\,a^5\,A\,B\,d^5\,\mathrm{Log}[a + b\,x] - 11\,a^5\,B^2\,d^5\,\mathrm{Log}[a + b\,x] - 30\,a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}\left[\frac{a}{b} + x\right]\,\mathrm{Log}[a + b\,x] +$

$\qquad 6\,a^5\,B^2\,d^5\,\mathrm{Log}\left[\frac{a}{b} + x\right]\,\mathrm{Log}[a + b\,x] + 30\,a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}\left[\frac{c}{d} + x\right]\,\mathrm{Log}[a + b\,x] -$

$\qquad 6\,a^5\,B^2\,d^5\,\mathrm{Log}\left[\frac{c}{d} + x\right]\,\mathrm{Log}[a + b\,x] - 30\,a^4\,b\,B^2\,c\,d^4\,\mathrm{Log}\left[\frac{c}{d} + x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] +$

$$6 a^5 B^2 d^5 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] - 6 b^5 B^2 c^4 d x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$30 a b^4 B^2 c^3 d^2 x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] - 60 a^2 b^3 B^2 c^2 d^3 x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$120 a^3 A b^2 B c d^4 x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 30 a^3 b^2 B^2 c d^4 x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$6 a^4 b B^2 d^5 x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 3 b^5 B^2 c^3 d^2 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] -$$

$$15 a b^4 B^2 c^2 d^3 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 180 a^2 A b^3 B c d^4 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] -$$

$$15 a^2 b^3 B^2 c d^4 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 60 a^3 A b^2 B d^5 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$27 a^3 b^2 B^2 d^5 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] - 2 b^5 B^2 c^2 d^3 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$120 a A b^4 B c d^4 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] - 20 a b^4 B^2 c d^4 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$120 a^2 A b^3 B d^5 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 22 a^2 b^3 B^2 d^5 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$30 A b^5 B c d^4 x^4 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] - 6 b^5 B^2 c d^4 x^4 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$90 a A b^4 B d^5 x^4 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 6 a b^4 B^2 d^5 x^4 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] +$$

$$24 A b^5 B d^5 x^5 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 30 a^4 b B^2 c d^4 \text{Log}[a + b x] \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] -$$

$$6 a^5 B^2 d^5 \text{Log}[a + b x] \text{Log}\left[\frac{e (a + b x)}{c + d x}\right] + 60 a^3 b^2 B^2 c d^4 x \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 +$$

$$90 a^2 b^3 B^2 c d^4 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 + 30 a^3 b^2 B^2 d^5 x^2 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 +$$

$$60 a b^4 B^2 c d^4 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 + 60 a^2 b^3 B^2 d^5 x^3 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 +$$

$$15 b^5 B^2 c d^4 x^4 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 + 45 a b^4 B^2 d^5 x^4 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 +$$

$$12 b^5 B^2 d^5 x^5 \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]^2 + 6 A b^5 B c^5 \text{Log}[c + d x] - b^5 B^2 c^5 \text{Log}[c + d x] -$$

$$30 a A b^4 B c^4 d \text{Log}[c + d x] + 11 a b^4 B^2 c^4 d \text{Log}[c + d x] + 60 a^2 A b^3 B c^3 d^2 \text{Log}[c + d x] -$$
$$37 a^2 b^3 B^2 c^3 d^2 \text{Log}[c + d x] - 60 a^3 A b^2 B c^2 d^3 \text{Log}[c + d x] + 27 a^3 b^2 B^2 c^2 d^3 \text{Log}[c + d x] -$$
$$6 b^5 B^2 c^5 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d x] + 30 a b^4 B^2 c^4 d \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d x] -$$

$$60 a^2 b^3 B^2 c^3 d^2 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d x] + 60 a^3 b^2 B^2 c^2 d^3 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d x] +$$

$$6 b^5 B^2 c^5 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d x] - 30 a b^4 B^2 c^4 d \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d x] +$$

$$60 a^2 b^3 B^2 c^3 d^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d x] - 60 a^3 b^2 B^2 c^2 d^3 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d x] +$$

$$6\, b^5\, B^2\, c^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] - 30\, a\, b^4\, B^2\, c^4\, d\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] +$$

$$60\, a^2\, b^3\, B^2\, c^3\, d^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] - 60\, a^3\, b^2\, B^2\, c^2\, d^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] +$$

$$6\, b^5\, B^2\, c^5\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 30\, a\, b^4\, B^2\, c^4\, d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$60\, a^2\, b^3\, B^2\, c^3\, d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 60\, a^3\, b^2\, B^2\, c^2\, d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$6\, b^2\, B^2\, c^2\,\big(b^3\, c^3 - 5\, a\, b^2\, c^2\, d + 10\, a^2\, b\, c\, d^2 - 10\, a^3\, d^3\big)\,\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$6\, a^4\, B^2\, d^4\,(-5\, b\, c + a\, d)\,\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)$$

Problem 56: Result more than twice size of optimal antiderivative.

$$\int (a\,g+b\,g\,x)^2\,(c\,i+d\,i\,x)\,\Big[A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big]^2\,dx$$

Optimal (type 4, 450 leaves, 10 steps):

$$-\frac{B^2\,(b\,c-a\,d)^3\,g^2\,i\,x}{3\,b\,d^2} + \frac{B^2\,(b\,c-a\,d)^2\,g^2\,i\,(c+d\,x)^2}{12\,d^3} -$$

$$\frac{B\,(b\,c-a\,d)^2\,g^2\,i\,(a+b\,x)^2\,\big(A+B\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big]\big)}{12\,b^2\,d} - \frac{B\,(b\,c-a\,d)\,g^2\,i\,(a+b\,x)^3\,\big(A+B\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big]\big)}{6\,b^2} +$$

$$\frac{(b\,c-a\,d)\,g^2\,i\,(a+b\,x)^3\,\big(A+B\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big]\big)^2}{12\,b^2} + \frac{g^2\,i\,(a+b\,x)^3\,(c+d\,x)\,\big(A+B\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big]\big)^2}{4\,b} +$$

$$\frac{B\,(b\,c-a\,d)^3\,g^2\,i\,(a+b\,x)\,\big(2\,A+B+2\,B\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big]\big)}{12\,b^2\,d^2} +$$

$$\frac{B\,(b\,c-a\,d)^4\,g^2\,i\,\text{Log}\big[\frac{b\,c-a\,d}{b\,(c+d\,x)}\big]\,\big(2\,A+3\,B+2\,B\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big]\big)}{12\,b^2\,d^3} +$$

$$\frac{B^2\,(b\,c-a\,d)^4\,g^2\,i\,\text{Log}[c+d\,x]}{6\,b^2\,d^3} + \frac{B^2\,(b\,c-a\,d)^4\,g^2\,i\,\text{PolyLog}\big[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\big]}{6\,b^2\,d^3}$$

Result (type 4, 2270 leaves):

$$\frac{1}{12\,b^2\,d^3}$$

$$g^2\,i\,\Big(2\,b^4\,B^2\,c^4 - 10\,a\,b^3\,B^2\,c^3\,d + 12\,a^2\,b^2\,B^2\,c^2\,d^2 - 2\,a^3\,b\,B^2\,c\,d^3 - 2\,a^4\,B^2\,d^4 + 2\,A\,b^4\,B\,c^3\,d\,x - b^4\,B^2\,c^3\,d\,x -$$

$$8\,a\,A\,b^3\,B\,c^2\,d^2\,x + 5\,a\,b^3\,B^2\,c^2\,d^2\,x + 12\,a^2\,A^2\,b^2\,c\,d^3\,x + 4\,a^2\,A\,b^2\,B\,c\,d^3\,x - 7\,a^2\,b^2\,B^2\,c\,d^3\,x +$$

$$2\,a^3\,A\,b\,B\,d^4\,x + 3\,a^3\,b\,B^2\,d^4\,x - A\,b^4\,B\,c^2\,d^2\,x^2 + b^4\,B^2\,c^2\,d^2\,x^2 + 12\,a\,A^2\,b^3\,c\,d^3\,x^2 -$$

$$4\,a\,A\,b^3\,B\,c\,d^3\,x^2 - 2\,a\,b^3\,B^2\,c\,d^3\,x^2 + 6\,a^2\,A^2\,b^2\,d^4\,x^2 + 5\,a^2\,A\,b^2\,B\,d^4\,x^2 + a^2\,b^2\,B^2\,d^4\,x^2 +$$

$$4\,A^2\,b^4\,c\,d^3\,x^3 - 2\,A\,b^4\,B\,c\,d^3\,x^3 + 8\,a\,A^2\,b^3\,d^4\,x^3 + 2\,a\,A\,b^3\,B\,d^4\,x^3 + 3\,A^2\,b^4\,d^4\,x^4 +$$

$$2\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{a}{b}+x\Big] - 8\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big] + 4\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big] +$$

$$2\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big] + 4\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 - a^4\,B^2\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 - 2\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{c}{d}+x\Big] +$$

$$8\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{c}{d}+x\Big] - 4\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big] - 2\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big] +$$

$$b^4\,B^2\,c^4\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 - 4\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 + 6\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 +$$

$$a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[a+b\,x] + 8\,a^3\,A\,b\,B\,c\,d^3\,\text{Log}[a+b\,x] + 2\,a^3\,b\,B^2\,c\,d^3\,\text{Log}[a+b\,x] -$$

$$2\,a^4\,A\,B\,d^4\,\text{Log}[a+b\,x] - 3\,a^4\,B^2\,d^4\,\text{Log}[a+b\,x] - 8\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x] +$$

$$2\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x] + 8\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x] -$$

$$2\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x] - 8\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$2\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 2\,b^4\,B^2\,c^3\,d\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$8\,a\,b^3\,B^2\,c^2\,d^2\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 24\,a^2\,A\,b^2\,B\,c\,d^3\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$4\,a^2\,b^2\,B^2\,c\,d^3\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 2\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$24\,a\,A\,b^3\,B\,c\,d^3\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 4\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$12\,a^2\,A\,b^2\,B\,d^4\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 5\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$8\,A\,b^4\,B\,c\,d^3\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 2\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$16\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 2\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$8\,a^3\,b\,B^2\,c\,d^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 2\,a^4\,B^2\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$12\,a^2\,b^2\,B^2\,c\,d^3\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 12\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$6\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 4\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$8\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 -$$

$$2\,A\,b^4\,B\,c^4\,\text{Log}[c+d\,x] + b^4\,B^2\,c^4\,\text{Log}[c+d\,x] + 8\,a\,A\,b^3\,B\,c^3\,d\,\text{Log}[c+d\,x] -$$

$$6\,a\,b^3\,B^2\,c^3\,d\,\text{Log}[c+d\,x] - 12\,a^2\,A\,b^2\,B\,c^2\,d^2\,\text{Log}[c+d\,x] + 5\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[c+d\,x] +$$

$$2\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] - 8\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] +$$

$$12\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] - 2\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] +$$

$$8\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] - 12\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] -$$

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

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

$$8\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-12\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$

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

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

Problem 57: Result more than twice size of optimal antiderivative.

$$\int (a\,g+b\,g\,x)\,(c\,i+d\,i\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2\,dx$$

Optimal (type 4, 343 leaves, 9 steps) :

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

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

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

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

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

Result (type 4, 1443 leaves) :

$$\frac{1}{6 \, b^2 \, d^2}$$

$$g \, i \, \Bigg(-2 \, b^3 \, B^2 \, c^3 + 2 \, a \, b^2 \, B^2 \, c^2 \, d + 2 \, a^2 \, b \, B^2 \, c \, d^2 - 2 \, a^3 \, B^2 \, d^3 - 2 \, A \, b^3 \, B \, c^2 \, d \, x + 2 \, b^3 \, B^2 \, c^2 \, d \, x + 6 \, a \, A^2 \, b^2 \, c \, d^2 \, x -$$

$$4 \, a \, b^2 \, B^2 \, c \, d^2 \, x + 2 \, a^2 \, A \, b \, B \, d^3 \, x + 2 \, a^2 \, b \, B^2 \, d^3 \, x + 3 \, A^2 \, b^3 \, c \, d^2 \, x^2 - 2 \, A \, b^3 \, B \, c \, d^2 \, x^2 + 3 \, a \, A^2 \, b^2 \, d^3 \, x^2 +$$

$$2 \, a \, A \, b^2 \, B \, d^3 \, x^2 + 2 \, A^2 \, b^3 \, d^3 \, x^3 - 2 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}\Big[\frac{a}{b} + x\Big] + 2 \, a^3 \, B^2 \, d^3 \, \text{Log}\Big[\frac{a}{b} + x\Big] +$$

$$3 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}\Big[\frac{a}{b} + x\Big]^2 - a^3 \, B^2 \, d^3 \, \text{Log}\Big[\frac{a}{b} + x\Big]^2 + 2 \, b^3 \, B^2 \, c^3 \, \text{Log}\Big[\frac{c}{d} + x\Big] - 2 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}\Big[\frac{c}{d} + x\Big] -$$

$$b^3 \, B^2 \, c^3 \, \text{Log}\Big[\frac{c}{d} + x\Big]^2 + 3 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}\Big[\frac{c}{d} + x\Big]^2 + 6 \, a^2 \, A \, b \, B \, c \, d^2 \, \text{Log}[a + b \, x] +$$

$$2 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}[a + b \, x] - 2 \, a^3 \, A \, B \, d^3 \, \text{Log}[a + b \, x] - 2 \, a^3 \, B^2 \, d^3 \, \text{Log}[a + b \, x] -$$

$$6 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}\Big[\frac{a}{b} + x\Big] \, \text{Log}[a + b \, x] + 2 \, a^3 \, B^2 \, d^3 \, \text{Log}\Big[\frac{a}{b} + x\Big] \, \text{Log}[a + b \, x] +$$

$$6 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}\Big[\frac{c}{d} + x\Big] \, \text{Log}[a + b \, x] - 2 \, a^3 \, B^2 \, d^3 \, \text{Log}\Big[\frac{c}{d} + x\Big] \, \text{Log}[a + b \, x] -$$

$$6 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}\Big[\frac{c}{d} + x\Big] \, \text{Log}\Big[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\Big] + 2 \, a^3 \, B^2 \, d^3 \, \text{Log}\Big[\frac{c}{d} + x\Big] \, \text{Log}\Big[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\Big] -$$

$$2 \, b^3 \, B^2 \, c^2 \, d \, x \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] + 12 \, a \, A \, b^2 \, B \, c \, d^2 \, x \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] +$$

$$2 \, a^2 \, b \, B^2 \, d^3 \, x \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] + 6 \, A \, b^3 \, B \, c \, d^2 \, x^2 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] - 2 \, b^3 \, B^2 \, c \, d^2 \, x^2 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] +$$

$$6 \, a \, A \, b^2 \, B \, d^3 \, x^2 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] + 2 \, a \, b^2 \, B^2 \, d^3 \, x^2 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] + 4 \, A \, b^3 \, B \, d^3 \, x^3 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] +$$

$$6 \, a^2 \, b \, B^2 \, c \, d^2 \, \text{Log}[a + b \, x] \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] - 2 \, a^3 \, B^2 \, d^3 \, \text{Log}[a + b \, x] \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] +$$

$$6 \, a \, b^2 \, B^2 \, c \, d^2 \, x \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big]^2 + 3 \, b^3 \, B^2 \, c \, d^2 \, x^2 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big]^2 +$$

$$3 \, a \, b^2 \, B^2 \, d^3 \, x^2 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big]^2 + 2 \, b^3 \, B^2 \, d^3 \, x^3 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big]^2 + 2 \, A \, b^3 \, B \, c^3 \, \text{Log}[c + d \, x] -$$

$$2 \, b^3 \, B^2 \, c^3 \, \text{Log}[c + d \, x] - 6 \, a \, A \, b^2 \, B \, c^2 \, d \, \text{Log}[c + d \, x] + 2 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}[c + d \, x] -$$

$$2 \, b^3 \, B^2 \, c^3 \, \text{Log}\Big[\frac{a}{b} + x\Big] \, \text{Log}[c + d \, x] + 6 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}\Big[\frac{a}{b} + x\Big] \, \text{Log}[c + d \, x] +$$

$$2 \, b^3 \, B^2 \, c^3 \, \text{Log}\Big[\frac{c}{d} + x\Big] \, \text{Log}[c + d \, x] - 6 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}\Big[\frac{c}{d} + x\Big] \, \text{Log}[c + d \, x] +$$

$$2 \, b^3 \, B^2 \, c^3 \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] \, \text{Log}[c + d \, x] - 6 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}\Big[\frac{e \, (a + b \, x)}{c + d \, x}\Big] \, \text{Log}[c + d \, x] +$$

$$2 \, b^3 \, B^2 \, c^3 \, \text{Log}\Big[\frac{a}{b} + x\Big] \, \text{Log}\Big[\frac{b \, (c + d \, x)}{b \, c - a \, d}\Big] - 6 \, a \, b^2 \, B^2 \, c^2 \, d \, \text{Log}\Big[\frac{a}{b} + x\Big] \, \text{Log}\Big[\frac{b \, (c + d \, x)}{b \, c - a \, d}\Big] +$$

$$2 \, b^2 \, B^2 \, c^2 \, \big(b \, c - 3 \, a \, d\big) \, \text{PolyLog}\Big[2, \frac{d \, (a + b \, x)}{-b \, c + a \, d}\Big] + 2 \, a^2 \, B^2 \, d^2 \, \big(-3 \, b \, c + a \, d\big) \, \text{PolyLog}\Big[2, \frac{b \, (c + d \, x)}{b \, c - a \, d}\Big]\Bigg)$$

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

$$\int (c\,i + d\,i\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right]\right)^2 dx$$

Optimal (type 4, 203 leaves, 7 steps):

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

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

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

Result (type 4, 734 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\int \frac{(c\,i + d\,i\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{a\,g + b\,g\,x}\,dx$$

Optimal (type 4, 286 leaves, 8 steps):

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

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

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

Result (type 4, 1196 leaves):

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

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

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

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

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

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

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

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

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

$$6\,\left(a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\left[\frac{c}{d} + x\right] - b\,c\,\text{Log}[c + d\,x] + \right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 60: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{(a\,g + b\,g\,x)^2}\,\text{d}x$$

Optimal (type 4, 241 leaves, 7 steps):

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

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

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

Result (type 4, 1155 leaves):

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

$$\left(6\,A\,b\,B\,c\,\left(-d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\right.$$

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

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

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

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

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

$$\left(2\,a\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\Bigg/$$

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

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

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

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

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

$$\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\Bigg)-2\,\text{Log}\left[\frac{a}{b}+x\right]\,\left((b\,c-a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\right.$$

$$\left.\left.(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Bigg)\Bigg/$$

$$((b\,c-a\,d)\,(a+b\,x))+6\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$

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

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

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

$$\left.\left(2\,a\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\middle/\right.$$

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

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

Problem 64: Result more than twice size of optimal antiderivative.

$$\int(a\,g+b\,g\,x)^3\,(c\,i+d\,i\,x)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2\,dx$$

Optimal (type 4, 711 leaves, 17 steps) :

$$\frac{3 B^2 (b c - a d)^5 g^3 i^2 x}{20 b^2 d^3} + \frac{B^2 (b c - a d)^2 g^3 i^2 (a + b x)^4}{60 b^3} - \frac{3 B^2 (b c - a d)^4 g^3 i^2 (c + d x)^2}{40 b d^4} +$$

$$\frac{B^2 (b c - a d)^3 g^3 i^2 (c + d x)^3}{60 d^4} - \frac{B (b c - a d)^3 g^3 i^2 (a + b x)^3 \left(A + B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{90 b^3 d} -$$

$$\frac{B (b c - a d)^2 g^3 i^2 (a + b x)^4 \left(A + B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{20 b^3} -$$

$$\frac{B (b c - a d) g^3 i^2 (a + b x)^4 (c + d x) \left(A + B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{15 b^2} +$$

$$\frac{(b c - a d)^2 g^3 i^2 (a + b x)^4 \left(A + B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)^2}{60 b^3} +$$

$$\frac{(b c - a d) g^3 i^2 (a + b x)^4 (c + d x) \left(A + B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)^2}{15 b^2} +$$

$$\frac{g^3 i^2 (a + b x)^4 (c + d x)^2 \left(A + B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)^2}{6 b} +$$

$$\frac{B (b c - a d)^4 g^3 i^2 (a + b x)^2 \left(3 A + B + 3 B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{180 b^3 d^2} -$$

$$\frac{B (b c - a d)^5 g^3 i^2 (a + b x) \left(6 A + 5 B + 6 B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{180 b^3 d^3} -$$

$$\frac{B (b c - a d)^6 g^3 i^2 \operatorname{Log}\left[\frac{b c - a d}{b (c+d x)}\right] \left(6 A + 11 B + 6 B \operatorname{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{180 b^3 d^4} -$$

$$\frac{B^2 (b c - a d)^6 g^3 i^2 \operatorname{Log}[c + d x]}{20 b^3 d^4} - \frac{B^2 (b c - a d)^6 g^3 i^2 \operatorname{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{30 b^3 d^4}$$

Result (type 4, 4173 leaves):

$$\frac{1}{360 b^3 d^4} g^3 i^2 \Big(-12 b^6 B^2 c^6 + 84 a b^5 B^2 c^5 d - 252 a^2 b^4 B^2 c^4 d^2 + 240 a^3 b^3 B^2 c^3 d^3 + 12 a^4 b^2 B^2 c^2 d^4 -$$

$$84 a^5 b B^2 c d^5 + 12 a^6 B^2 d^6 - 12 A b^6 B c^5 d x + 8 b^6 B^2 c^5 d x + 72 a A b^5 B c^4 d^2 x - 54 a b^5 B^2 c^4 d^2 x -$$

$$180 a^2 A b^4 B c^3 d^3 x + 154 a^2 b^4 B^2 c^3 d^3 x + 360 a^3 A^2 b^3 c^2 d^4 x + 60 a^3 A b^3 B c^2 d^4 x -$$

$$194 a^3 b^3 B^2 c^2 d^4 x + 72 a^4 A b^2 B c d^5 x + 102 a^4 b^2 B^2 c d^5 x - 12 a^5 A b B d^6 x - 16 a^5 b B^2 d^6 x +$$

$$6 A b^6 B c^4 d^2 x^2 - 7 b^6 B^2 c^4 d^2 x^2 - 36 a A b^5 B c^3 d^3 x^2 + 46 a b^5 B^2 c^3 d^3 x^2 + 540 a^2 A^2 b^4 c^2 d^4 x^2 -$$

$$180 a^2 A b^4 B c^2 d^4 x^2 - 60 a^2 b^4 B^2 c^2 d^4 x^2 + 360 a^3 A^2 b^3 c d^5 x^2 + 204 a^3 A b^3 B c d^5 x^2 +$$

$$10 a^3 b^3 B^2 c d^5 x^2 + 6 a^4 A b^2 B d^6 x^2 + 11 a^4 b^2 B^2 d^6 x^2 - 4 A b^6 B c^3 d^3 x^3 + 6 b^6 B^2 c^3 d^3 x^3 +$$

$$360 a A^2 b^5 c^2 d^4 x^3 - 156 a A b^5 B c^2 d^4 x^3 + 6 a b^5 B^2 c^2 d^4 x^3 + 720 a^2 A^2 b^4 c d^5 x^3 +$$

$$84 a^2 A b^4 B c d^5 x^3 - 30 a^2 b^4 B^2 c d^5 x^3 + 120 a^3 A^2 b^3 d^6 x^3 + 76 a^3 A b^3 B d^6 x^3 +$$

$$18 a^3 b^3 B^2 d^6 x^3 + 90 A^2 b^6 c^2 d^4 x^4 - 42 A b^6 B c^2 d^4 x^4 + 6 b^6 B^2 c^2 d^4 x^4 + 540 a A^2 b^5 c d^5 x^4 -$$

$$36 a A b^5 B c d^5 x^4 - 12 a b^5 B^2 c d^5 x^4 + 270 a^2 A^2 b^4 d^6 x^4 + 78 a^2 A b^4 B d^6 x^4 + 6 a^2 b^4 B^2 d^6 x^4 +$$

$$144 A^2 b^6 c d^5 x^5 - 24 A b^6 B c d^5 x^5 + 216 a A^2 b^5 d^6 x^5 + 24 a A b^5 B d^6 x^5 + 60 A^2 b^6 d^6 x^6 -$$

$$12 a b^5 B^2 c^5 d \operatorname{Log}\left[\frac{a}{b} + x\right] + 72 a^2 b^4 B^2 c^4 d^2 \operatorname{Log}\left[\frac{a}{b} + x\right] - 180 a^3 b^3 B^2 c^3 d^3 \operatorname{Log}\left[\frac{a}{b} + x\right] +$$

$$60 a^4 b^2 B^2 c^2 d^4 \operatorname{Log}\left[\frac{a}{b} + x\right] + 72 a^5 b B^2 c d^5 \operatorname{Log}\left[\frac{a}{b} + x\right] - 12 a^6 B^2 d^6 \operatorname{Log}\left[\frac{a}{b} + x\right] +$$

$$90 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, \text{Log}\left[\frac{a}{b} + x\right]^2 - 36 \, a^5 \, b \, B^2 \, c \, d^5 \, \text{Log}\left[\frac{a}{b} + x\right]^2 + 6 \, a^6 \, B^2 \, d^6 \, \text{Log}\left[\frac{a}{b} + x\right]^2 +$$

$$12 \, b^6 \, B^2 \, c^6 \, \text{Log}\left[\frac{c}{d} + x\right] - 72 \, a \, b^5 \, B^2 \, c^5 \, d \, \text{Log}\left[\frac{c}{d} + x\right] + 180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}\left[\frac{c}{d} + x\right] -$$

$$60 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, \text{Log}\left[\frac{c}{d} + x\right] - 72 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, \text{Log}\left[\frac{c}{d} + x\right] + 12 \, a^5 \, b \, B^2 \, c \, d^5 \, \text{Log}\left[\frac{c}{d} + x\right] -$$

$$6 \, b^6 \, B^2 \, c^6 \, \text{Log}\left[\frac{c}{d} + x\right]^2 + 36 \, a \, b^5 \, B^2 \, c^5 \, d \, \text{Log}\left[\frac{c}{d} + x\right]^2 - 90 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}\left[\frac{c}{d} + x\right]^2 +$$

$$120 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, \text{Log}\left[\frac{c}{d} + x\right]^2 - 6 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}[a + b \, x] + 32 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, \text{Log}[a + b \, x] +$$

$$180 \, a^4 \, A \, b^2 \, B \, c^2 \, d^4 \, \text{Log}[a + b \, x] + 66 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, \text{Log}[a + b \, x] - 72 \, a^5 \, A \, b \, B \, c \, d^5 \, \text{Log}[a + b \, x] -$$
$$108 \, a^5 \, b \, B^2 \, c \, d^5 \, \text{Log}[a + b \, x] + 12 \, a^6 \, A \, B \, d^6 \, \text{Log}[a + b \, x] + 16 \, a^6 \, B^2 \, d^6 \, \text{Log}[a + b \, x] -$$

$$180 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b \, x] + 72 \, a^5 \, b \, B^2 \, c \, d^5 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b \, x] -$$

$$12 \, a^6 \, B^2 \, d^6 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b \, x] + 180 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b \, x] -$$

$$72 \, a^5 \, b \, B^2 \, c \, d^5 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b \, x] + 12 \, a^6 \, B^2 \, d^6 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b \, x] -$$

$$180 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] + 72 \, a^5 \, b \, B^2 \, c \, d^5 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] -$$

$$12 \, a^6 \, B^2 \, d^6 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] - 12 \, b^6 \, B^2 \, c^5 \, d \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$72 \, a \, b^5 \, B^2 \, c^4 \, d^2 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 180 \, a^2 \, b^4 \, B^2 \, c^3 \, d^3 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$720 \, a^3 \, A \, b^3 \, B \, c^2 \, d^4 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] + 60 \, a^3 \, b^3 \, B^2 \, c^2 \, d^4 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$72 \, a^4 \, b^2 \, B^2 \, c \, d^5 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 12 \, a^5 \, b \, B^2 \, d^6 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$6 \, b^6 \, B^2 \, c^4 \, d^2 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 36 \, a \, b^5 \, B^2 \, c^3 \, d^3 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$1080 \, a^2 \, A \, b^4 \, B \, c^2 \, d^4 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 180 \, a^2 \, b^4 \, B^2 \, c^2 \, d^4 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$720 \, a^3 \, A \, b^3 \, B \, c \, d^5 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] + 204 \, a^3 \, b^3 \, B^2 \, c \, d^5 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

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

$$720 \, a \, A \, b^5 \, B \, c^2 \, d^4 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 156 \, a \, b^5 \, B^2 \, c^2 \, d^4 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$1440 \, a^2 \, A \, b^4 \, B \, c \, d^5 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] + 84 \, a^2 \, b^4 \, B^2 \, c \, d^5 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$240 \, a^3 \, A \, b^3 \, B \, d^6 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] + 76 \, a^3 \, b^3 \, B^2 \, d^6 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$180 \, A \, b^6 \, B \, c^2 \, d^4 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 42 \, b^6 \, B^2 \, c^2 \, d^4 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$1080 \, a \, A \, b^5 \, B \, c \, d^5 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] - 36 \, a \, b^5 \, B^2 \, c \, d^5 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] +$$

$$540\,a^2\,A\,b^4\,B\,d^6\,x^4\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 78\,a^2\,b^4\,B^2\,d^6\,x^4\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$288\,A\,b^6\,B\,c\,d^5\,x^5\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 24\,b^6\,B^2\,c\,d^5\,x^5\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$432\,a\,A\,b^5\,B\,d^6\,x^5\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 24\,a\,b^5\,B^2\,d^6\,x^5\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$120\,A\,b^6\,B\,d^6\,x^6\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 180\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$72\,a^5\,b\,B^2\,c\,d^5\,\text{Log}[a+b\,x]\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 12\,a^6\,B^2\,d^6\,\text{Log}[a+b\,x]\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$360\,a^3\,b^3\,B^2\,c^2\,d^4\,x\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 540\,a^2\,b^4\,B^2\,c^2\,d^4\,x^2\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$$

$$360\,a^3\,b^3\,B^2\,c\,d^5\,x^2\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 360\,a\,b^5\,B^2\,c^2\,d^4\,x^3\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$$

$$720\,a^2\,b^4\,B^2\,c\,d^5\,x^3\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 120\,a^3\,b^3\,B^2\,d^6\,x^3\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$$

$$90\,b^6\,B^2\,c^2\,d^4\,x^4\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 540\,a\,b^5\,B^2\,c\,d^5\,x^4\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$$

$$270\,a^2\,b^4\,B^2\,d^6\,x^4\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 144\,b^6\,B^2\,c\,d^5\,x^5\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$$

$$216\,a\,b^5\,B^2\,d^6\,x^5\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 60\,b^6\,B^2\,d^6\,x^6\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$$

$$12\,A\,b^6\,B\,c^6\,\text{Log}[c+d\,x] - 8\,b^6\,B^2\,c^6\,\text{Log}[c+d\,x] - 72\,a\,A\,b^5\,B\,c^5\,d\,\text{Log}[c+d\,x] +$$
$$60\,a\,b^5\,B^2\,c^5\,d\,\text{Log}[c+d\,x] + 180\,a^2\,A\,b^4\,B\,c^4\,d^2\,\text{Log}[c+d\,x] - 186\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}[c+d\,x] -$$
$$240\,a^3\,A\,b^3\,B\,c^3\,d^3\,\text{Log}[c+d\,x] + 128\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}[c+d\,x] + 6\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}[c+d\,x] -$$
$$12\,b^6\,B^2\,c^6\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] + 72\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] -$$

$$180\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] + 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] +$$

$$12\,b^6\,B^2\,c^6\,\text{Log}\!\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] - 72\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\!\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] +$$

$$180\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\!\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] - 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\!\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] +$$

$$12\,b^6\,B^2\,c^6\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x] - 72\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x] +$$

$$180\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x] - 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x] +$$

$$12\,b^6\,B^2\,c^6\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] - 72\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] +$$

$$180\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] - 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] +$$

$$12\,b^3\,B^2\,c^3\,\left(b^3\,c^3 - 6\,a\,b^2\,c^2\,d + 15\,a^2\,b\,c\,d^2 - 20\,a^3\,d^3\right)\text{PolyLog}\!\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] -$$

$$12\, a^4\, B^2\, d^4\, \left(15\, b^2\, c^2 - 6\, a\, b\, c\, d + a^2\, d^2\right) \operatorname{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)$$

Problem 65: Result more than twice size of optimal antiderivative.

$$\int \left(a\,g + b\,g\,x\right)^2 \left(c\,i + d\,i\,x\right)^2 \left(A + B \operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2 dx$$

Optimal (type 4, 761 leaves, 15 steps):

$$-\frac{B^2\,(b\,c-a\,d)^4\,g^2\,i^2\,x}{10\,b^2\,d^2} - \frac{B^2\,(b\,c-a\,d)^3\,g^2\,i^2\,(c+d\,x)^2}{20\,b\,d^3} + \frac{B^2\,(b\,c-a\,d)^2\,g^2\,i^2\,(c+d\,x)^3}{30\,d^3} +$$

$$\frac{B^2\,(b\,c-a\,d)^5\,g^2\,i^2\,\operatorname{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{30\,b^3\,d^3} - \frac{B\,(b\,c-a\,d)^3\,g^2\,i^2\,(a+b\,x)^2\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b^3\,d} -$$

$$\frac{B\,(b\,c-a\,d)^2\,g^2\,i^2\,(a+b\,x)^3\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{15\,b^3} -$$

$$\frac{B\,(b\,c-a\,d)^3\,g^2\,i^2\,(c+d\,x)^2\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{5\,b\,d^3} +$$

$$\frac{4\,B\,(b\,c-a\,d)^2\,g^2\,i^2\,(c+d\,x)^3\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{15\,d^3} -$$

$$\frac{b\,B\,(b\,c-a\,d)\,g^2\,i^2\,(c+d\,x)^4\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,d^3} +$$

$$\frac{(b\,c-a\,d)^2\,g^2\,i^2\,(a+b\,x)^3\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{30\,b^3} +$$

$$\frac{(b\,c-a\,d)\,g^2\,i^2\,(a+b\,x)^3\,(c+d\,x)\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{10\,b^2} +$$

$$\frac{g^2\,i^2\,(a+b\,x)^3\,(c+d\,x)^2\,\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{5\,b} +$$

$$\frac{B\,(b\,c-a\,d)^4\,g^2\,i^2\,(a+b\,x)\,\left(2\,A+B+2\,B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b^3\,d^2} +$$

$$\frac{B\,(b\,c-a\,d)^5\,g^2\,i^2\,\operatorname{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(2\,A+3\,B+2\,B\operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b^3\,d^3} +$$

$$\frac{B^2\,(b\,c-a\,d)^5\,g^2\,i^2\,\operatorname{Log}\left[c+d\,x\right]}{10\,b^3\,d^3} + \frac{B^2\,(b\,c-a\,d)^5\,g^2\,i^2\,\operatorname{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{15\,b^3\,d^3}$$

Result (type 4, 3042 leaves):

$$\frac{1}{60\,b^3\,d^3}$$

$$g^2\,i^2\,\left(4\,b^5\,B^2\,c^5 - 24\,a\,b^4\,B^2\,c^4\,d + 20\,a^2\,b^3\,B^2\,c^3\,d^2 + 20\,a^3\,b^2\,B^2\,c^2\,d^3 - 24\,a^4\,b\,B^2\,c\,d^4 + 4\,a^5\,B^2\,d^5 + 4\,A\,b^5\,B\right.$$

$c^4\,d\,x - 4\,b^5\,B^2\,c^4\,d\,x - 20\,a\,A\,b^4\,B\,c^3\,d^2\,x + 22\,a\,b^4\,B^2\,c^3\,d^2\,x + 60\,a^2\,A^2\,b^3\,c^2\,d^3\,x - 36\,a^2\,b^3\,B^2\,c^2\,d^3\,x +$
$20\,a^3\,A\,b^2\,B\,c\,d^4\,x + 22\,a^3\,b^2\,B^2\,c\,d^4\,x - 4\,a^4\,A\,b\,B\,d^5\,x - 4\,a^4\,b\,B^2\,d^5\,x - 2\,A\,b^5\,B\,c^3\,d^2\,x^2 +$
$3\,b^5\,B^2\,c^3\,d^2\,x^2 + 60\,a\,A^2\,b^4\,c^2\,d^3\,x^2 - 30\,a\,A\,b^4\,B\,c^2\,d^3\,x^2 - 3\,a\,b^4\,B^2\,c^2\,d^3\,x^2 + 60\,a^2\,A^2\,b^3\,c\,d^4\,x^2 +$
$30\,a^2\,A\,b^3\,B\,c\,d^4\,x^2 - 3\,a^2\,b^3\,B^2\,c\,d^4\,x^2 + 2\,a^3\,A\,b^2\,B\,d^5\,x^2 + 3\,a^3\,b^2\,B^2\,d^5\,x^2 + 20\,A^2\,b^5\,c^2\,d^3\,x^3 -$
$12\,A\,b^5\,B\,c^2\,d^3\,x^3 + 2\,b^5\,B^2\,c^2\,d^3\,x^3 + 80\,a\,A^2\,b^4\,c\,d^4\,x^3 - 4\,a\,b^4\,B^2\,c\,d^4\,x^3 + 20\,a^2\,A^2\,b^3\,d^5\,x^3 +$
$12\,a^2\,A\,b^3\,B\,d^5\,x^3 + 2\,a^2\,b^3\,B^2\,d^5\,x^3 + 30\,A^2\,b^5\,c\,d^4\,x^4 - 6\,A\,b^5\,B\,c\,d^4\,x^4 + 30\,a\,A^2\,b^4\,d^5\,x^4 + 6\,a\,A\,b^4\,B\,d^5\,x^4 +$

$12\,A^2\,b^5\,d^5\,x^5 + 4\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\dfrac{a}{b} + x\right] - 20\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\dfrac{a}{b} + x\right] + 20\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\dfrac{a}{b} + x\right] -$

$4\,a^5\,B^2\,d^5\,\text{Log}\left[\dfrac{a}{b} + x\right] + 20\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\dfrac{a}{b} + x\right]^2 - 10\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\dfrac{a}{b} + x\right]^2 +$

$2\,a^5\,B^2\,d^5\,\text{Log}\left[\dfrac{a}{b} + x\right]^2 - 4\,b^5\,B^2\,c^5\,\text{Log}\left[\dfrac{c}{d} + x\right] + 20\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\dfrac{c}{d} + x\right] -$

$20\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\dfrac{c}{d} + x\right] + 4\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\dfrac{c}{d} + x\right] + 2\,b^5\,B^2\,c^5\,\text{Log}\left[\dfrac{c}{d} + x\right]^2 -$

$10\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\dfrac{c}{d} + x\right]^2 + 20\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\dfrac{c}{d} + x\right]^2 + 2\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[a + b\,x] +$

$40\,a^3\,A\,b^2\,B\,c^2\,d^3\,\text{Log}[a + b\,x] + 18\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[a + b\,x] - 20\,a^4\,A\,b\,B\,c\,d^4\,\text{Log}[a + b\,x] -$
$24\,a^4\,b\,B^2\,c\,d^4\,\text{Log}[a + b\,x] + 4\,a^5\,A\,B\,d^5\,\text{Log}[a + b\,x] + 4\,a^5\,B^2\,d^5\,\text{Log}[a + b\,x] -$

$40\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\dfrac{a}{b} + x\right]\text{Log}[a + b\,x] + 20\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\dfrac{a}{b} + x\right]\text{Log}[a + b\,x] -$

$4\,a^5\,B^2\,d^5\,\text{Log}\left[\dfrac{a}{b} + x\right]\text{Log}[a + b\,x] + 40\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\dfrac{c}{d} + x\right]\text{Log}[a + b\,x] -$

$20\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\dfrac{c}{d} + x\right]\text{Log}[a + b\,x] + 4\,a^5\,B^2\,d^5\,\text{Log}\left[\dfrac{c}{d} + x\right]\text{Log}[a + b\,x] -$

$40\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\dfrac{c}{d} + x\right]\text{Log}\left[\dfrac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + 20\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\dfrac{c}{d} + x\right]\text{Log}\left[\dfrac{d\,(a + b\,x)}{-b\,c + a\,d}\right] -$

$4\,a^5\,B^2\,d^5\,\text{Log}\left[\dfrac{c}{d} + x\right]\text{Log}\left[\dfrac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + 4\,b^5\,B^2\,c^4\,d\,x\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] -$

$20\,a\,b^4\,B^2\,c^3\,d^2\,x\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 120\,a^2\,A\,b^3\,B\,c^2\,d^3\,x\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] +$

$20\,a^3\,b^2\,B^2\,c\,d^4\,x\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] - 4\,a^4\,b\,B^2\,d^5\,x\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] -$

$2\,b^5\,B^2\,c^3\,d^2\,x^2\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 120\,a\,A\,b^4\,B\,c^2\,d^3\,x^2\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] -$

$30\,a\,b^4\,B^2\,c^2\,d^3\,x^2\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 120\,a^2\,A\,b^3\,B\,c\,d^4\,x^2\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] +$

$30\,a^2\,b^3\,B^2\,c\,d^4\,x^2\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 2\,a^3\,b^2\,B^2\,d^5\,x^2\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] +$

$40\,A\,b^5\,B\,c^2\,d^3\,x^3\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] - 12\,b^5\,B^2\,c^2\,d^3\,x^3\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] +$

$160\,a\,A\,b^4\,B\,c\,d^4\,x^3\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 40\,a^2\,A\,b^3\,B\,d^5\,x^3\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] +$

$12\,a^2\,b^3\,B^2\,d^5\,x^3\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 60\,A\,b^5\,B\,c\,d^4\,x^4\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] -$

$6\,b^5\,B^2\,c\,d^4\,x^4\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] + 60\,a\,A\,b^4\,B\,d^5\,x^4\,\text{Log}\left[\dfrac{e\,(a + b\,x)}{c + d\,x}\right] +$

$6 a b^4 B^2 d^5 x^4 \log\left[\dfrac{e(a+bx)}{c+dx}\right] + 24 A b^5 B d^5 x^5 \log\left[\dfrac{e(a+bx)}{c+dx}\right] +$

$40 a^3 b^2 B^2 c^2 d^3 \log[a+bx] \log\left[\dfrac{e(a+bx)}{c+dx}\right] - 20 a^4 b B^2 c d^4 \log[a+bx] \log\left[\dfrac{e(a+bx)}{c+dx}\right] +$

$4 a^5 B^2 d^5 \log[a+bx] \log\left[\dfrac{e(a+bx)}{c+dx}\right] + 60 a^2 b^3 B^2 c^2 d^3 x \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 +$

$60 a b^4 B^2 c^2 d^3 x^2 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 + 60 a^2 b^3 B^2 c d^4 x^2 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 +$

$20 b^5 B^2 c^2 d^3 x^3 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 + 80 a b^4 B^2 c d^4 x^3 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 +$

$20 a^2 b^3 B^2 d^5 x^3 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 + 30 b^5 B^2 c d^4 x^4 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 +$

$30 a b^4 B^2 d^5 x^4 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 + 12 b^5 B^2 d^5 x^5 \log\left[\dfrac{e(a+bx)}{c+dx}\right]^2 - 4 A b^5 B c^5 \log[c+dx] +$

$4 b^5 B^2 c^5 \log[c+dx] + 20 a A b^4 B c^4 d \log[c+dx] - 24 a b^4 B^2 c^4 d \log[c+dx] -$
$40 a^2 A b^3 B c^3 d^2 \log[c+dx] + 18 a^2 b^3 B^2 c^3 d^2 \log[c+dx] + 2 a^3 b^2 B^2 c^2 d^3 \log[c+dx] +$

$4 b^5 B^2 c^5 \log\left[\dfrac{a}{b}+x\right] \log[c+dx] - 20 a b^4 B^2 c^4 d \log\left[\dfrac{a}{b}+x\right] \log[c+dx] +$

$40 a^2 b^3 B^2 c^3 d^2 \log\left[\dfrac{a}{b}+x\right] \log[c+dx] - 4 b^5 B^2 c^5 \log\left[\dfrac{c}{d}+x\right] \log[c+dx] +$

$20 a b^4 B^2 c^4 d \log\left[\dfrac{c}{d}+x\right] \log[c+dx] - 40 a^2 b^3 B^2 c^3 d^2 \log\left[\dfrac{c}{d}+x\right] \log[c+dx] -$

$4 b^5 B^2 c^5 \log\left[\dfrac{e(a+bx)}{c+dx}\right] \log[c+dx] + 20 a b^4 B^2 c^4 d \log\left[\dfrac{e(a+bx)}{c+dx}\right] \log[c+dx] -$

$40 a^2 b^3 B^2 c^3 d^2 \log\left[\dfrac{e(a+bx)}{c+dx}\right] \log[c+dx] - 4 b^5 B^2 c^5 \log\left[\dfrac{a}{b}+x\right] \log\left[\dfrac{b(c+dx)}{bc-ad}\right] +$

$20 a b^4 B^2 c^4 d \log\left[\dfrac{a}{b}+x\right] \log\left[\dfrac{b(c+dx)}{bc-ad}\right] - 40 a^2 b^3 B^2 c^3 d^2 \log\left[\dfrac{a}{b}+x\right] \log\left[\dfrac{b(c+dx)}{bc-ad}\right] -$

$4 b^3 B^2 c^3 \left(b^2 c^2 - 5 a b c d + 10 a^2 d^2\right) \text{PolyLog}\left[2, \dfrac{d(a+bx)}{-bc+ad}\right] -$

$4 a^3 B^2 d^3 \left(10 b^2 c^2 - 5 a b c d + a^2 d^2\right) \text{PolyLog}\left[2, \dfrac{b(c+dx)}{bc-ad}\right]\Bigg)$

Problem 66: Result more than twice size of optimal antiderivative.

$$\int (a g + b g x)(c i + d i x)^2 \left(A + B \log\left[\dfrac{e(a+bx)}{c+dx}\right]\right)^2 dx$$

Optimal (type 4, 589 leaves, 14 steps):

$$\frac{B^2 (b c - a d)^3 g i^2 x}{12 b^2 d} + \frac{B^2 (b c - a d)^2 g i^2 (c + d x)^2}{12 b d^2} -$$

$$\frac{B^2 (b c - a d)^4 g i^2 \text{Log}\left[\frac{a + b x}{c + d x}\right]}{12 b^3 d^2} - \frac{B (b c - a d)^3 g i^2 (a + b x) \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)}{6 b^3 d} -$$

$$\frac{B (b c - a d)^2 g i^2 (a + b x)^2 \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)}{6 b^3} + \frac{B (b c - a d)^2 g i^2 (c + d x)^2 \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)}{4 b d^2} -$$

$$\frac{B (b c - a d) g i^2 (c + d x)^3 \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)}{6 d^2} + \frac{(b c - a d)^2 g i^2 (a + b x)^2 \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)^2}{12 b^3} +$$

$$\frac{(b c - a d) g i^2 (a + b x)^2 (c + d x) \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)^2}{6 b^2} +$$

$$\frac{g i^2 (a + b x)^2 (c + d x)^2 \left(A + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)^2}{4 b} -$$

$$\frac{B (b c - a d)^4 g i^2 \text{Log}\left[\frac{b c - a d}{b (c + d x)}\right] \left(A + B + B \text{Log}\left[\frac{e (a + b x)}{c + d x}\right]\right)}{6 b^3 d^2} -$$

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

Result (type 4, 2268 leaves):

$$\frac{1}{12 b^3 d^2} g i^2$$

$$\Big(- 2 b^4 B^2 c^4 - 2 a b^3 B^2 c^3 d + 12 a^2 b^2 B^2 c^2 d^2 - 10 a^3 b B^2 c d^3 + 2 a^4 B^2 d^4 - 2 A b^4 B c^3 d x + 3 b^4 B^2 c^3 d x +$$

$$12 a A^2 b^3 c^2 d^2 x - 4 a A b^3 B c^2 d^2 x - 7 a b^3 B^2 c^2 d^2 x + 8 a^2 A b^2 B c d^3 x + 5 a^2 b^2 B^2 c d^3 x -$$

$$2 a^3 A b B d^4 x - a^3 b B^2 d^4 x + 6 A^2 b^4 c^2 d^2 x^2 - 5 A b^4 B c^2 d^2 x^2 + b^4 B^2 c^2 d^2 x^2 + 12 a A^2 b^3 c d^3 x^2 +$$

$$4 a A b^3 B c d^3 x^2 - 2 a b^3 B^2 c d^3 x^2 + a^2 A b^2 B d^4 x^2 + a^2 b^2 B^2 d^4 x^2 + 8 A^2 b^4 c d^3 x^3 -$$

$$2 A b^4 B c d^3 x^3 + 4 a A^2 b^3 d^4 x^3 + 2 a A b^3 B d^4 x^3 + 3 A^2 b^4 d^4 x^4 - 2 a b^3 B^2 c^3 d \text{Log}\left[\frac{a}{b} + x\right] -$$

$$4 a^2 b^2 B^2 c^2 d^2 \text{Log}\left[\frac{a}{b} + x\right] + 8 a^3 b B^2 c d^3 \text{Log}\left[\frac{a}{b} + x\right] - 2 a^4 B^2 d^4 \text{Log}\left[\frac{a}{b} + x\right] +$$

$$6 a^2 b^2 B^2 c^2 d^2 \text{Log}\left[\frac{a}{b} + x\right]^2 - 4 a^3 b B^2 c d^3 \text{Log}\left[\frac{a}{b} + x\right]^2 + a^4 B^2 d^4 \text{Log}\left[\frac{a}{b} + x\right]^2 +$$

$$2 b^4 B^2 c^4 \text{Log}\left[\frac{c}{d} + x\right] + 4 a b^3 B^2 c^3 d \text{Log}\left[\frac{c}{d} + x\right] - 8 a^2 b^2 B^2 c^2 d^2 \text{Log}\left[\frac{c}{d} + x\right] +$$

$$2 a^3 b B^2 c d^3 \text{Log}\left[\frac{c}{d} + x\right] - b^4 B^2 c^4 \text{Log}\left[\frac{c}{d} + x\right]^2 + 4 a b^3 B^2 c^3 d \text{Log}\left[\frac{c}{d} + x\right]^2 +$$

$$12 a^2 A b^2 B c^2 d^2 \text{Log}[a + b x] + 5 a^2 b^2 B^2 c^2 d^2 \text{Log}[a + b x] - 8 a^3 A b B c d^3 \text{Log}[a + b x] -$$

$$6 a^3 b B^2 c d^3 \text{Log}[a + b x] + 2 a^4 A B d^4 \text{Log}[a + b x] + a^4 B^2 d^4 \text{Log}[a + b x] -$$

$$12 a^2 b^2 B^2 c^2 d^2 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] + 8 a^3 b B^2 c d^3 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] -$$

$$2 a^4 B^2 d^4 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] + 12 a^2 b^2 B^2 c^2 d^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] -$$

$$8 a^3 b B^2 c d^3 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] + 2 a^4 B^2 d^4 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] -$$

$12\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+8\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$

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

$24\,a\,A\,b^3\,B\,c^2\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-4\,a\,b^3\,B^2\,c^2\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$

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

$12\,A\,b^4\,B\,c^2\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-5\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$

$24\,a\,A\,b^3\,B\,c\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+4\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$

$a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+16\,A\,b^4\,B\,c\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-$

$2\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+8\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+2\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$

$6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+12\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[a+b\,x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-$

$8\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[a+b\,x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+2\,a^4\,B^2\,d^4\,\text{Log}\left[a+b\,x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$

$12\,a\,b^3\,B^2\,c^2\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+6\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$12\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+8\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$4\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$2\,A\,b^4\,B\,c^4\,\text{Log}\left[c+d\,x\right]-3\,b^4\,B^2\,c^4\,\text{Log}\left[c+d\,x\right]-8\,a\,A\,b^3\,B\,c^3\,d\,\text{Log}\left[c+d\,x\right]+$

$2\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[c+d\,x\right]+a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[c+d\,x\right]-2\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[c+d\,x\right]+$

$8\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[c+d\,x\right]+2\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[c+d\,x\right]-$

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

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

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

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

Problem 67: Result more than twice size of optimal antiderivative.

$$\int (c\,i + d\,i\,x)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2 dx$$

Optimal (type 4, 334 leaves, 11 steps):

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

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

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

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

Result (type 4, 1278 leaves):

$$\frac{1}{6\,b^3\,d}\,i^2\,\left(6\,A^2\,b^3\,c^2\,d\,x + 6\,A^2\,b^3\,c\,d^2\,x^2 + 2\,A^2\,b^3\,d^3\,x^3 + \right.$$

$$2\,A\,b\,B\,d\,\left(b\,c - a\,d\right)\,x\,\left(2\,b\,c + 2\,a\,d - b\,d\,x\right) + 12\,b\,B^2\,c\,d\,\left(-b\,c + a\,d\right)\,\left(a + b\,x\right)\,\left(-1 + \text{Log}\left[\frac{a}{b} + x\right]\right) -$$

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

$$2\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 12\,b^2\,B^2\,c\,\left(b\,c - a\,d\right)\,\left(c + d\,x\right)\,\left(-1 + \text{Log}\left[\frac{c}{d} + x\right]\right) -$$

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

$$4\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d} + x\right]^2 - 12\,a^2\,A\,b\,B\,c\,d^2\,\text{Log}\left[a + b\,x\right] + 4\,a^3\,A\,B\,d^3\,\text{Log}\left[a + b\,x\right] +$$

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

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

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

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

$$12\,A\,b^2\,B\,c\,\left(d\,\left(-b\,c + a\,d\right)\,x + b\,d^2\,x^2\,\text{Log}\left[\frac{e\,\left(a + b\,x\right)}{c + d\,x}\right] + b\,c^2\,\text{Log}\left[c + d\,x\right]\right) +$$

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

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

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

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

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

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

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

$$6\,b^2\,B^2\,c^2\,\left(a\,d\,\text{Log}\left[\frac{a}{b} + x\right]^2 + b\,c\,\text{Log}\left[\frac{c}{d} + x\right]^2 - 2\,a\,d\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[a + b\,x\right] + \right.$$

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

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

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

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

Problem 68: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{a\,g + b\,g\,x}\,dx$$

Optimal (type 4, 535 leaves, 15 steps):

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

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

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

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

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

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

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

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

Result (type 4, 2547 leaves):

$$\frac{1}{12\,b^3\,g}\,i^2\left(12\,A^2\,b\,d\,(2\,b\,c - a\,d)\,x + 6\,A^2\,b^2\,d^2\,x^2 + 12\,A^2\,(b\,c - a\,d)^2\,\text{Log}[a + b\,x] - \right.$$

$$24\,A\,b\,B\,c\left(a\,d\,\text{Log}\left[\frac{a}{b} + x\right]^2 - 2\,a\,d\,\text{Log}\left[\frac{a}{b} + x\right]\left(1 + \text{Log}[a + b\,x]\right) + \right.$$

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

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

$$12\,A\,b^2\,B\,c^2\left(\text{Log}\left[\frac{a}{b} + x\right]^2 - 2\,\text{Log}[a + b\,x]\left(\text{Log}\left[\frac{a}{b} + x\right] - \text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right]\right) - \right.$$

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

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

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

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

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

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

$$8\,b\,B^2\,c\left(a\,d\,\text{Log}\left[\frac{a}{b}+x\right]^3-3\,d\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)-\right.$$

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

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

$$6\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}[c+d\,x]+\right.$$

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

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

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

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

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

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

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

$$B^2\left(4\,a^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]^3-12\,a\,d^2\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)-\right.$$

$$3\,d^2\,(a+b\,x)\left(7\,a-b\,x+(-6\,a+2\,b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]+2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)-$$

$$12\,a\,b\,d\,(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)-$$

$$3\,b^2\,(c+d\,x)\left(7\,c-d\,x+(-6\,c+2\,d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

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

$$6\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)$$

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

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

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

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

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

$$a^2\,d^2\,\text{Log}\,[a+b\,x]-b^2\,c^2\,\text{Log}\,[c+d\,x]-2\,a\,b\,c\,d\,\text{Log}\,[c+d\,x]-$$

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

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

$$4\,a\,d\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}\,[c+d\,x]+\text{Log}\left[\frac{a}{b}+x\right]\right.$$

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

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

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

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

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

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

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

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

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

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

$$6\,\text{PolyLog}\Big[3,\ \frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-6\,\text{PolyLog}\Big[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)$$

Problem 69: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^2\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2}{(a\,g+b\,g\,x)^2}\ dx$$

Optimal (type 4, 442 leaves, 11 steps):

$$-\frac{2\,B^2\,(b\,c-a\,d)\,i^2\,(c+d\,x)}{b^2\,g^2\,(a+b\,x)}-\frac{2\,B\,(b\,c-a\,d)\,i^2\,(c+d\,x)\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)}{b^2\,g^2\,(a+b\,x)}+$$

$$\frac{2\,B\,d\,(b\,c-a\,d)\,i^2\,\text{Log}\Big[\frac{b\,c-a\,d}{b\,(c+d\,x)}\Big]\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)}{b^3\,g^2}+$$

$$\frac{d^2\,i^2\,(a+b\,x)\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2}{b^3\,g^2}-\frac{(b\,c-a\,d)\,i^2\,(c+d\,x)\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2}{b^2\,g^2\,(a+b\,x)}-$$

$$\frac{2\,d\,(b\,c-a\,d)\,i^2\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2\,\text{Log}\Big[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\Big]}{b^3\,g^2}+\frac{2\,B^2\,d\,(b\,c-a\,d)\,i^2\,\text{PolyLog}\Big[2,\ \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{b^3\,g^2}+$$

$$\frac{4\,B\,d\,(b\,c-a\,d)\,i^2\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)\,\text{PolyLog}\Big[2,\ \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\Big]}{b^3\,g^2}+$$

$$\frac{4\,B^2\,d\,(b\,c-a\,d)\,i^2\,\text{PolyLog}\Big[3,\ \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\Big]}{b^3\,g^2}$$

Result (type 4, 2775 leaves):

$$\frac{A^2\,d^2\,i^2\,x}{b^2\,g^2}+\frac{-A^2\,b^2\,c^2\,i^2+2\,a\,A^2\,b\,c\,d\,i^2-a^2\,A^2\,d^2\,i^2}{b^3\,g^2\,(a+b\,x)}-\frac{2\,\big(-A^2\,b\,c\,d\,i^2+a\,A^2\,d^2\,i^2\big)\,\text{Log}\,[a+b\,x]}{b^3\,g^2}+$$

$$\Big(B^2\,c^2\,i^2\,\Big(-2\,b\,c+2\,a\,d-2\,d\,(a+b\,x)\,\text{Log}\,[a+b\,x]+(-2\,b\,c+2\,a\,d)\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]-$$

$$\qquad b\,(c+d\,x)\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2+2\,d\,(a+b\,x)\,\text{Log}\,[c+d\,x]\Big)\Big)\Big/\big(b\,(b\,c-a\,d)\,g^2\,(a+b\,x)\big)+$$

$$\frac{1}{g^2}2\,A\,B\,c^2\,i^2\left|\ -\frac{\big(\frac{a}{b}+x\big)\,\Big(\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{a}{b}+x\big]^2\Big)}{(a+b\,x)^2\,\text{Log}\big[\frac{a}{b}+x\big]}-\frac{\dfrac{b\,\big(\frac{c}{d}+x\big)\,\text{Log}\big[\frac{c}{d}+x\big]}{\big(-a+\frac{b\,c}{d}\big)^2\,\Big(1-\frac{b\,\big(\frac{c}{d}+x\big)}{-a+\frac{b\,c}{d}}\Big)}+\dfrac{\text{Log}\Big[1-\frac{b\,\big(\frac{c}{d}+x\big)}{-a+\frac{b\,c}{d}}\Big]}{-a+\frac{b\,c}{d}}}{b}-\right.$$

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

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

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

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)+\frac{1}{b^3}$$

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

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

$$\frac{1}{g^2}4\,A\,B\,c\,d\,i^2\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^2}+\frac{a\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2\,(a+b\,x)}+\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Big/$$

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

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

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

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

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

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

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

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

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

$$\left(a\left((-bc+ad)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+bx)\,\left(\text{Log}[a+bx]-\text{Log}[c+dx]\right)\right)\right)\Big/$$

$$\left(b^2\,(bc-ad)\,(a+bx)\right)-\frac{\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+bx)}{-bc+ad}\right]+\text{PolyLog}\left[2,\frac{b\,(c+dx)}{bc-ad}\right]}{b^2}\Bigg]-$$

$$2\left(-\left(\left(a\left(d\,(a+bx)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\left((-bc+ad)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+bx)\right)\right.\right.\right.$$

$$\left(\text{Log}[a+bx]-\text{Log}[c+dx]\right)\Big)-2\,\text{Log}\left[\frac{a}{b}+x\right]\left((bc-ad)\,\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.d\,(a+bx)\,\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]\right)-2\,d\,(a+bx)\,\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]\right)\Bigg)\Bigg/$$

$$\left(2b^2\,(bc-ad)\,(a+bx)\right)\right)+\frac{1}{2b^2}\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]\right)-\right.$$

$$\left.2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]+2\,\text{PolyLog}\left[3,\frac{d\,(a+bx)}{-bc+ad}\right]\right)\right)+$$

$$\frac{1}{b^2}\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+bx)}{-bc+ad}\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+dx)}{bc-ad}\right]-\right.$$

$$\left.2\,\text{PolyLog}\left[3,\frac{b\,(c+dx)}{bc-ad}\right]\right)\Bigg]$$

Problem 70: Result more than twice size of optimal antiderivative.

$$\int\frac{(ci+dix)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)^2}{(ag+bgx)^3}\,dx$$

Optimal (type 4, 387 leaves, 10 steps):

$$-\frac{2B^2di^2\,(c+dx)}{b^2g^3\,(a+bx)}-\frac{B^2i^2\,(c+dx)^2}{4bg^3\,(a+bx)^2}-\frac{2Bdi^2\,(c+dx)\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)}{b^2g^3\,(a+bx)}-$$

$$\frac{Bi^2\,(c+dx)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)}{2bg^3\,(a+bx)^2}-\frac{di^2\,(c+dx)\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)^2}{b^2g^3\,(a+bx)}-$$

$$\frac{i^2\,(c+dx)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)^2}{2bg^3\,(a+bx)^2}-\frac{d^2i^2\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)^2\text{Log}\left[1-\frac{b\,(c+dx)}{d\,(a+bx)}\right]}{b^3g^3}+$$

$$\frac{2Bd^2i^2\left(A+B\,\text{Log}\left[\frac{e\,(a+bx)}{c+dx}\right]\right)\text{PolyLog}\left[2,\frac{b\,(c+dx)}{d\,(a+bx)}\right]}{b^3g^3}+\frac{2B^2d^2i^2\,\text{PolyLog}\left[3,\frac{b\,(c+dx)}{d\,(a+bx)}\right]}{b^3g^3}$$

Result (type 4, 3601 leaves):

$$-\frac{A^2\,(b^2c^2-2abcd+a^2d^2)\,i^2}{2b^3g^3\,(a+bx)^2}+\frac{2\,(-A^2bcdi^2+aA^2d^2i^2)}{b^3g^3\,(a+bx)}+\frac{A^2d^2i^2\,\text{Log}[a+bx]}{b^3g^3}-$$

$$\left(B^2\,c^2\,i^2\,\left(b^2\,c^2 - 8\,a\,b\,c\,d + 7\,a^2\,d^2 - 6\,b^2\,c\,d\,x + 6\,a\,b\,d^2\,x - 6\,d^2\,(a + b\,x)^2\,\text{Log}[a + b\,x]\right.\right. +$$

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

$$\left.\left.\text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right]^2 + 6\,a^2\,d^2\,\text{Log}[c + d\,x] + 12\,a\,b\,d^2\,x\,\text{Log}[c + d\,x] + 6\,b^2\,d^2\,x^2\,\text{Log}[c + d\,x]\right)\right) \Big/$$

$$\left(4\,b\,(b\,c - a\,d)^2\,g^3\,(a + b\,x)^2\right) + \frac{1}{g^3}2\,A\,B\,c^2\,i^2\,\left(-\frac{\left(\frac{a}{b} + x\right)\left(2\,\text{Log}\left[\frac{a}{b} + x\right] + 4\,\text{Log}\left[\frac{a}{b} + x\right]^2\right)}{8\,(a + b\,x)^3\,\text{Log}\left[\frac{a}{b} + x\right]} - \frac{1}{2\,b}\right.$$

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

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

$$\frac{1}{g^3}4\,A\,B\,c\,d\,i^2\,\left(-\frac{1 + \text{Log}\left[\frac{a}{b} + x\right]}{b^2\,(a + b\,x)} + \frac{a\left(1 + 2\,\text{Log}\left[\frac{a}{b} + x\right]\right)}{4\,b^2\,(a + b\,x)^2} - \right.$$

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

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

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

$$\frac{1}{g^3}2\,A\,B\,d^2\,i^2\,\left(\frac{\text{Log}\left[\frac{a}{b} + x\right]^2}{2\,b^3} + \frac{2\,a\left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{b^3\,(a + b\,x)} - \frac{a^2\left(1 + 2\,\text{Log}\left[\frac{a}{b} + x\right]\right)}{4\,b^3\,(a + b\,x)^2} + \right.$$

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

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

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

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

$$\frac{1}{g^3}\,2\,B^2\,c\,d\,i^2\,\left(-\frac{2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2}{b^2\,(a+b\,x)}+\frac{a\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^2\,(a+b\,x)^2}\;+\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$2\,d^2\,(a+b\,x)^2\,\mathrm{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big]\Big)\Big/\Big(2\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\Big)\Bigg)+$$

$$\frac{1}{g^3}\,B^2\,d^2\,i^2\,\Bigg(\frac{\mathrm{Log}\big[\frac{a}{b}+x\big]^3}{3\,b^3}+\frac{2\,a\,\Big(2+2\,\mathrm{Log}\big[\frac{a}{b}+x\big]+\mathrm{Log}\big[\frac{a}{b}+x\big]^2\Big)}{b^3\,(a+b\,x)}-$$

$$\frac{a^2\,\Big(1+2\,\mathrm{Log}\big[\frac{a}{b}+x\big]+2\,\mathrm{Log}\big[\frac{a}{b}+x\big]^2\Big)}{4\,b^3\,(a+b\,x)^2}+\frac{1}{2\,b^3}$$

$$\Bigg(\frac{a\,(3\,a+4\,b\,x)}{(a+b\,x)^2}+2\,\mathrm{Log}[a+b\,x]\Bigg)\,\Big(-\mathrm{Log}\big[\frac{a}{b}+x\big]+\mathrm{Log}\big[\frac{c}{d}+x\big]+\mathrm{Log}\big[\frac{a\,e}{c+d\,x}+\frac{b\,e\,x}{c+d\,x}\big]\Big)^2-$$

$$\Bigg(2\,a\,\Big(-b\,(c+d\,x)\,\mathrm{Log}\big[\frac{c}{d}+x\big]^2+2\,d\,(a+b\,x)\,\mathrm{Log}\big[\frac{c}{d}+x\big]\,\mathrm{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+$$

$$2\,d\,(a+b\,x)\,\mathrm{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)\Big/\Big(b^3\,(b\,c-a\,d)\,(a+b\,x)\Big)-$$

$$\Bigg(a^2\,\Big(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\mathrm{Log}\big[\frac{c}{d}+x\big]^2-2\,d^2\,(a+b\,x)^2\,\mathrm{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+$$

$$2\,d\,(a+b\,x)\,\mathrm{Log}\big[\frac{c}{d}+x\big]\,\Big(b\,(c+d\,x)+d\,(a+b\,x)\,\mathrm{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]\Big)+$$

$$2\,d^2\,(a+b\,x)^2\,\mathrm{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)\Big/$$

$$\Big(2\,b^3\,(b\,c-a\,d)^2\,(a+b\,x)^2\Big)+2\,\Big(-\mathrm{Log}\big[\frac{a}{b}+x\big]+\mathrm{Log}\big[\frac{c}{d}+x\big]+\mathrm{Log}\big[\frac{a\,e}{c+d\,x}+\frac{b\,e\,x}{c+d\,x}\big]\Big)$$

$$\Bigg(\frac{\mathrm{Log}\big[\frac{a}{b}+x\big]^2}{2\,b^3}+\frac{2\,a\,\Big(1+\mathrm{Log}\big[\frac{a}{b}+x\big]\Big)}{b^3\,(a+b\,x)}-\frac{a^2\,\Big(1+2\,\mathrm{Log}\big[\frac{a}{b}+x\big]\Big)}{4\,b^3\,(a+b\,x)^2}+$$

$$\Big(2\,a\,\Big((-b\,c+a\,d)\,\mathrm{Log}\big[\frac{c}{d}+x\big]+d\,(a+b\,x)\,\big(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x]\big)\Big)\Big)\Big/\Big(b^3\,(b\,c-a\,d)$$

$$(a+b\,x)\Big)+\frac{a^2\,\Big(\mathrm{Log}\big[\frac{c}{d}+x\big]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\mathrm{Log}[a+b\,x]-d\,(a+b\,x)\,\mathrm{Log}[c+d\,x])}{(b\,c-a\,d)^2}\Big)}{2\,b^3\,(a+b\,x)^2}-$$

$$\frac{\mathrm{Log}\big[\frac{c}{d}+x\big]\,\mathrm{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+\mathrm{PolyLog}\big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]}{b^3}\Bigg)-$$

$$2\,\Bigg(-\Bigg(\Big(a\,\Big(d\,(a+b\,x)\,\mathrm{Log}\big[\frac{a}{b}+x\big]^2+2\,\Big((-b\,c+a\,d)\,\mathrm{Log}\big[\frac{c}{d}+x\big]+d\,(a+b\,x)$$

$$\big(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x]\big)\Big)-2\,\mathrm{Log}\big[\frac{a}{b}+x\big]\,\Big((b\,c-a\,d)\,\mathrm{Log}\big[\frac{c}{d}+x\big]+$$

$$d\,(a+b\,x)\,\mathrm{Log}\big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]\Big)-2\,d\,(a+b\,x)\,\mathrm{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)\Big)\Big/$$

$$\Big(b^3\,(b\,c-a\,d)\,(a+b\,x)\Big)\Bigg)-\Big(a^2\,\Big(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2$$

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

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

$$\left. 2\,d\,(a + b\,x)\,\left(\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right)\right)\right)\bigg/$$

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

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

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

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

Problem 74: Result more than twice size of optimal antiderivative.

$$\int (a\,g + b\,g\,x)^3\,(c\,i + d\,i\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right]\right)^2\,dx$$

Optimal (type 4, 1089 leaves, 22 steps):

$$\frac{5\,B^2\,(b\,c-a\,d)^6\,g^3\,i^3\,x}{84\,b^3\,d^3}+\frac{B^2\,(b\,c-a\,d)^3\,g^3\,i^3\,(a+b\,x)^4}{140\,b^4}-\frac{29\,B^2\,(b\,c-a\,d)^5\,g^3\,i^3\,(c+d\,x)^2}{840\,b^2\,d^4}+$$

$$\frac{47\,B^2\,(b\,c-a\,d)^4\,g^3\,i^3\,(c+d\,x)^3}{1260\,b\,d^4}-\frac{13\,B^2\,(b\,c-a\,d)^3\,g^3\,i^3\,(c+d\,x)^4}{420\,d^4}+\frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,i^3\,(c+d\,x)^5}{105\,d^4}-$$

$$\frac{B^2\,(b\,c-a\,d)^7\,g^3\,i^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{210\,b^4\,d^4}-\frac{B\,(b\,c-a\,d)^4\,g^3\,i^3\,(a+b\,x)^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{210\,b^4\,d}-$$

$$\frac{3\,B\,(b\,c-a\,d)^3\,g^3\,i^3\,(a+b\,x)^4\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{140\,b^4}-$$

$$\frac{B\,(b\,c-a\,d)^2\,g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{35\,b^3}+$$

$$\frac{2\,B\,(b\,c-a\,d)^4\,g^3\,i^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{21\,b\,d^4}-$$

$$\frac{3\,B\,(b\,c-a\,d)^3\,g^3\,i^3\,(c+d\,x)^4\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{14\,d^4}+$$

$$\frac{6\,b\,B\,(b\,c-a\,d)^2\,g^3\,i^3\,(c+d\,x)^5\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{35\,d^4}-$$

$$\frac{b^2\,B\,(b\,c-a\,d)\,g^3\,i^3\,(c+d\,x)^6\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{21\,d^4}+$$

$$\frac{(b\,c-a\,d)^3\,g^3\,i^3\,(a+b\,x)^4\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{140\,b^4}+$$

$$\frac{(b\,c-a\,d)^2\,g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{35\,b^3}+$$

$$\frac{(b\,c-a\,d)\,g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{14\,b^2}+$$

$$\frac{g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{7\,b}+$$

$$\frac{B\,(b\,c-a\,d)^5\,g^3\,i^3\,(a+b\,x)^2\,\left(3\,A+B+3\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{420\,b^4\,d^2}-$$

$$\frac{B\,(b\,c-a\,d)^6\,g^3\,i^3\,(a+b\,x)\,\left(6\,A+5\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{420\,b^4\,d^3}-$$

$$\frac{B\,(b\,c-a\,d)^7\,g^3\,i^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(6\,A+11\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{420\,b^4\,d^4}-$$

$$\frac{11\,B^2\,(b\,c-a\,d)^7\,g^3\,i^3\,\text{Log}[c+d\,x]}{420\,b^4\,d^4}-\frac{B^2\,(b\,c-a\,d)^7\,g^3\,i^3\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{70\,b^4\,d^4}$$

Result (type 4, 5123 leaves) :

$$\frac{1}{2520\, b^4\, d^4}$$

$g^3\, i^3\, \Big(-36\, b^7\, B^2\, c^7 + 288\, a\, b^6\, B^2\, c^6\, d - 1008\, a^2\, b^5\, B^2\, c^5\, d^2 + 756\, a^3\, b^4\, B^2\, c^4\, d^3 + 756\, a^4\, b^3\, B^2\, c^3\, d^4 - 1008\, a^5$

$b^2\, B^2\, c^2\, d^5 + 288\, a^6\, b\, B^2\, c\, d^6 - 36\, a^7\, B^2\, d^7 - 36\, A\, b^7\, B\, c^6\, d\, x + 36\, b^7\, B^2\, c^6\, d\, x + 252\, a\, A\, b^6\, B\, c^5\, d^2\, x -$
$270\, a\, b^6\, B^2\, c^5\, d^2\, x - 756\, a^2\, A\, b^5\, B\, c^4\, d^3\, x + 876\, a^2\, b^5\, B^2\, c^4\, d^3\, x + 2520\, a^3\, A^2\, b^4\, c^3\, d^4\, x -$
$1284\, a^3\, b^4\, B^2\, c^3\, d^4\, x + 756\, a^4\, A\, b^3\, B\, c^2\, d^5\, x + 876\, a^4\, b^3\, B^2\, c^2\, d^5\, x - 252\, a^5\, A\, b^2\, B\, c\, d^6\, x -$
$270\, a^5\, b^2\, B^2\, c\, d^6\, x + 36\, a^6\, A\, b\, B\, d^7\, x + 36\, a^6\, b\, B^2\, d^7\, x + 18\, A\, b^7\, B\, c^5\, d^2\, x^2 - 27\, b^7\, B^2\, c^5\, d^2\, x^2 -$
$126\, a\, A\, b^6\, B\, c^4\, d^3\, x^2 + 201\, a\, b^6\, B^2\, c^4\, d^3\, x^2 + 3780\, a^2\, A^2\, b^5\, c^3\, d^4\, x^2 - 1512\, a^2\, A\, b^5\, B\, c^3\, d^4\, x^2 -$
$174\, a^2\, b^5\, B^2\, c^3\, d^4\, x^2 + 3780\, a^3\, A^2\, b^4\, c^2\, d^5\, x^2 + 1512\, a^3\, A\, b^4\, B\, c^2\, d^5\, x^2 - 174\, a^3\, b^4\, B^2\, c^2\, d^5\, x^2 +$
$126\, a^4\, A\, b^3\, B\, c\, d^6\, x^2 + 201\, a^4\, b^3\, B^2\, c\, d^6\, x^2 - 18\, a^5\, A\, b^2\, B\, d^7\, x^2 - 27\, a^5\, b^2\, B^2\, d^7\, x^2 - 12\, A\, b^7\, B\, c^4\, d^3\, x^3 +$
$22\, b^7\, B^2\, c^4\, d^3\, x^3 + 2520\, a\, A^2\, b^6\, c^3\, d^4\, x^3 - 1176\, a\, A\, b^6\, B\, c^3\, d^4\, x^3 + 152\, a\, b^6\, B^2\, c^3\, d^4\, x^3 +$
$7560\, a^2\, A^2\, b^5\, c^2\, d^5\, x^3 - 348\, a^2\, b^5\, B^2\, c^2\, d^5\, x^3 + 2520\, a^3\, A^2\, b^4\, c\, d^6\, x^3 + 1176\, a^3\, A\, b^4\, B\, c\, d^6\, x^3 +$
$152\, a^3\, b^4\, B^2\, c\, d^6\, x^3 + 12\, a^4\, A\, b^3\, B\, d^7\, x^3 + 22\, a^4\, b^3\, B^2\, d^7\, x^3 + 630\, A^2\, b^7\, c^3\, d^4\, x^4 - 306\, A\, b^7\, B\, c^3\, d^4\, x^4 +$
$60\, b^7\, B^2\, c^3\, d^4\, x^4 + 5670\, a\, A^2\, b^6\, c^2\, d^5\, x^4 - 882\, a\, A\, b^6\, B\, c^2\, d^5\, x^4 - 60\, a\, b^6\, B^2\, c^2\, d^5\, x^4 +$
$5670\, a^2\, A^2\, b^5\, c\, d^6\, x^4 + 882\, a^2\, A\, b^5\, B\, c\, d^6\, x^4 - 60\, a^2\, b^5\, B^2\, c\, d^6\, x^4 + 630\, a^3\, A^2\, b^4\, d^7\, x^4 + 306\, a^3\, A\, b^4\, B\, d^7\, x^4 +$
$60\, a^3\, b^4\, B^2\, d^7\, x^4 + 1512\, A^2\, b^7\, c^2\, d^5\, x^5 - 360\, A\, b^7\, B\, c^2\, d^5\, x^5 + 24\, b^7\, B^2\, c^2\, d^5\, x^5 + 4536\, a\, A^2\, b^6\, c\, d^6\, x^5 -$
$48\, a\, b^6\, B^2\, c\, d^6\, x^5 + 1512\, a^2\, A^2\, b^5\, d^7\, x^5 + 360\, a^2\, A\, b^5\, B\, d^7\, x^5 + 24\, a^2\, b^5\, B^2\, d^7\, x^5 + 1260\, A^2\, b^7\, c\, d^6\, x^6 -$
$120\, A\, b^7\, B\, c\, d^6\, x^6 + 1260\, a\, A^2\, b^6\, d^7\, x^6 + 120\, a\, A\, b^6\, B\, d^7\, x^6 + 360\, A^2\, b^7\, d^7\, x^7 - 36\, a\, b^6\, B^2\, c^6\, d\, \text{Log}\Big[\frac{a}{b} + x\Big] +$

$252\, a^2\, b^5\, B^2\, c^5\, d^2\, \text{Log}\Big[\frac{a}{b} + x\Big] - 756\, a^3\, b^4\, B^2\, c^4\, d^3\, \text{Log}\Big[\frac{a}{b} + x\Big] + 756\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}\Big[\frac{a}{b} + x\Big] -$

$252\, a^6\, b\, B^2\, c\, d^6\, \text{Log}\Big[\frac{a}{b} + x\Big] + 36\, a^7\, B^2\, d^7\, \text{Log}\Big[\frac{a}{b} + x\Big] + 630\, a^4\, b^3\, B^2\, c^3\, d^4\, \text{Log}\Big[\frac{a}{b} + x\Big]^2 -$

$378\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}\Big[\frac{a}{b} + x\Big]^2 + 126\, a^6\, b\, B^2\, c\, d^6\, \text{Log}\Big[\frac{a}{b} + x\Big]^2 - 18\, a^7\, B^2\, d^7\, \text{Log}\Big[\frac{a}{b} + x\Big]^2 +$

$36\, b^7\, B^2\, c^7\, \text{Log}\Big[\frac{c}{d} + x\Big] - 252\, a\, b^6\, B^2\, c^6\, d\, \text{Log}\Big[\frac{c}{d} + x\Big] + 756\, a^2\, b^5\, B^2\, c^5\, d^2\, \text{Log}\Big[\frac{c}{d} + x\Big] -$

$756\, a^4\, b^3\, B^2\, c^3\, d^4\, \text{Log}\Big[\frac{c}{d} + x\Big] + 252\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}\Big[\frac{c}{d} + x\Big] - 36\, a^6\, b\, B^2\, c\, d^6\, \text{Log}\Big[\frac{c}{d} + x\Big] -$

$18\, b^7\, B^2\, c^7\, \text{Log}\Big[\frac{c}{d} + x\Big]^2 + 126\, a\, b^6\, B^2\, c^6\, d\, \text{Log}\Big[\frac{c}{d} + x\Big]^2 - 378\, a^2\, b^5\, B^2\, c^5\, d^2\, \text{Log}\Big[\frac{c}{d} + x\Big]^2 +$

$630\, a^3\, b^4\, B^2\, c^4\, d^3\, \text{Log}\Big[\frac{c}{d} + x\Big]^2 - 18\, a^2\, b^5\, B^2\, c^5\, d^2\, \text{Log}[a + b\, x] + 114\, a^3\, b^4\, B^2\, c^4\, d^3\, \text{Log}[a + b\, x] +$

$1260\, a^4\, A\, b^3\, B\, c^3\, d^4\, \text{Log}[a + b\, x] + 642\, a^4\, b^3\, B^2\, c^3\, d^4\, \text{Log}[a + b\, x] - 756\, a^5\, A\, b^2\, B\, c^2\, d^5\, \text{Log}[a + b\, x] -$
$990\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}[a + b\, x] + 252\, a^6\, A\, b\, B\, c\, d^6\, \text{Log}[a + b\, x] + 288\, a^6\, b\, B^2\, c\, d^6\, \text{Log}[a + b\, x] -$
$36\, a^7\, A\, B\, d^7\, \text{Log}[a + b\, x] - 36\, a^7\, B^2\, d^7\, \text{Log}[a + b\, x] - 1260\, a^4\, b^3\, B^2\, c^3\, d^4\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a + b\, x] +$

$756\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a + b\, x] - 252\, a^6\, b\, B^2\, c\, d^6\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a + b\, x] +$

$36\, a^7\, B^2\, d^7\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a + b\, x] + 1260\, a^4\, b^3\, B^2\, c^3\, d^4\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}[a + b\, x] -$

$756\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}[a + b\, x] + 252\, a^6\, b\, B^2\, c\, d^6\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}[a + b\, x] -$

$36\, a^7\, B^2\, d^7\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}[a + b\, x] - 1260\, a^4\, b^3\, B^2\, c^3\, d^4\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] +$

$756\, a^5\, b^2\, B^2\, c^2\, d^5\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] - 252\, a^6\, b\, B^2\, c\, d^6\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] +$

$36\, a^7\, B^2\, d^7\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] - 36\, b^7\, B^2\, c^6\, d\, x\, \text{Log}\Big[\frac{e\,(a + b\, x)}{c + d\, x}\Big] +$

$252\,a\,b^6\,B^2\,c^5\,d^2\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] - 756\,a^2\,b^5\,B^2\,c^4\,d^3\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$5040\,a^3\,A\,b^4\,B\,c^3\,d^4\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 756\,a^4\,b^3\,B^2\,c^2\,d^5\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$252\,a^5\,b^2\,B^2\,c\,d^6\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 36\,a^6\,b\,B^2\,d^7\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$18\,b^7\,B^2\,c^5\,d^2\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] - 126\,a\,b^6\,B^2\,c^4\,d^3\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$7560\,a^2\,A\,b^5\,B\,c^3\,d^4\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] - 1512\,a^2\,b^5\,B^2\,c^3\,d^4\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$7560\,a^3\,A\,b^4\,B\,c^2\,d^5\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 1512\,a^3\,b^4\,B^2\,c^2\,d^5\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$126\,a^4\,b^3\,B^2\,c\,d^6\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] - 18\,a^5\,b^2\,B^2\,d^7\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$12\,b^7\,B^2\,c^4\,d^3\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 5040\,a\,A\,b^6\,B\,c^3\,d^4\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$1176\,a\,b^6\,B^2\,c^3\,d^4\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 15120\,a^2\,A\,b^5\,B\,c^2\,d^5\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$5040\,a^3\,A\,b^4\,B\,c\,d^6\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 1176\,a^3\,b^4\,B^2\,c\,d^6\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$12\,a^4\,b^3\,B^2\,d^7\,x^3\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 1260\,A\,b^7\,B\,c^3\,d^4\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$306\,b^7\,B^2\,c^3\,d^4\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 11340\,a\,A\,b^6\,B\,c^2\,d^5\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$882\,a\,b^6\,B^2\,c^2\,d^5\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 11340\,a^2\,A\,b^5\,B\,c\,d^6\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$882\,a^2\,b^5\,B^2\,c\,d^6\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 1260\,a^3\,A\,b^4\,B\,d^7\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$306\,a^3\,b^4\,B^2\,d^7\,x^4\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 3024\,A\,b^7\,B\,c^2\,d^5\,x^5\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$360\,b^7\,B^2\,c^2\,d^5\,x^5\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 9072\,a\,A\,b^6\,B\,c\,d^6\,x^5\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$3024\,a^2\,A\,b^5\,B\,d^7\,x^5\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 360\,a^2\,b^5\,B^2\,d^7\,x^5\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$2520\,A\,b^7\,B\,c\,d^6\,x^6\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] - 120\,b^7\,B^2\,c\,d^6\,x^6\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$2520\,a\,A\,b^6\,B\,d^7\,x^6\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 120\,a\,b^6\,B^2\,d^7\,x^6\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] +$

$720\,A\,b^7\,B\,d^7\,x^7\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 1260\,a^4\,b^3\,B^2\,c^3\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$756\,a^5\,b^2\,B^2\,c^2\,d^5\,\text{Log}[a+b\,x]\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 252\,a^6\,b\,B^2\,c\,d^6\,\text{Log}[a+b\,x]\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$36 \, a^7 \, B^2 \, d^7 \, \text{Log}[a + b \, x] \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] + 2520 \, a^3 \, b^4 \, B^2 \, c^3 \, d^4 \, x \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$3780 \, a^2 \, b^5 \, B^2 \, c^3 \, d^4 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 3780 \, a^3 \, b^4 \, B^2 \, c^2 \, d^5 \, x^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$2520 \, a \, b^6 \, B^2 \, c^3 \, d^4 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 7560 \, a^2 \, b^5 \, B^2 \, c^2 \, d^5 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$2520 \, a^3 \, b^4 \, B^2 \, c \, d^6 \, x^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 630 \, b^7 \, B^2 \, c^3 \, d^4 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$5670 \, a \, b^6 \, B^2 \, c^2 \, d^5 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 5670 \, a^2 \, b^5 \, B^2 \, c \, d^6 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$630 \, a^3 \, b^4 \, B^2 \, d^7 \, x^4 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 1512 \, b^7 \, B^2 \, c^2 \, d^5 \, x^5 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$4536 \, a \, b^6 \, B^2 \, c \, d^6 \, x^5 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 1512 \, a^2 \, b^5 \, B^2 \, d^7 \, x^5 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$1260 \, b^7 \, B^2 \, c \, d^6 \, x^6 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 1260 \, a \, b^6 \, B^2 \, d^7 \, x^6 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 +$

$360 \, b^7 \, B^2 \, d^7 \, x^7 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right]^2 + 36 \, A \, b^7 \, B \, c^7 \, \text{Log}[c + d \, x] - 36 \, b^7 \, B^2 \, c^7 \, \text{Log}[c + d \, x] -$

$252 \, a \, A \, b^6 \, B \, c^6 \, d \, \text{Log}[c + d \, x] + 288 \, a \, b^6 \, B^2 \, c^6 \, d \, \text{Log}[c + d \, x] + 756 \, a^2 \, A \, b^5 \, B \, c^5 \, d^2 \, \text{Log}[c + d \, x] -$
$990 \, a^2 \, b^5 \, B^2 \, c^5 \, d^2 \, \text{Log}[c + d \, x] - 1260 \, a^3 \, A \, b^4 \, B \, c^4 \, d^3 \, \text{Log}[c + d \, x] +$
$642 \, a^3 \, b^4 \, B^2 \, c^4 \, d^3 \, \text{Log}[c + d \, x] + 114 \, a^4 \, b^3 \, B^2 \, c^3 \, d^4 \, \text{Log}[c + d \, x] - 18 \, a^5 \, b^2 \, B^2 \, c^2 \, d^5 \, \text{Log}[c + d \, x] -$

$36 \, b^7 \, B^2 \, c^7 \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}[c + d \, x] + 252 \, a \, b^6 \, B^2 \, c^6 \, d \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}[c + d \, x] -$

$756 \, a^2 \, b^5 \, B^2 \, c^5 \, d^2 \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}[c + d \, x] + 1260 \, a^3 \, b^4 \, B^2 \, c^4 \, d^3 \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}[c + d \, x] +$

$36 \, b^7 \, B^2 \, c^7 \, \text{Log}\left[\frac{c}{d} + x\right] \, \text{Log}[c + d \, x] - 252 \, a \, b^6 \, B^2 \, c^6 \, d \, \text{Log}\left[\frac{c}{d} + x\right] \, \text{Log}[c + d \, x] +$

$756 \, a^2 \, b^5 \, B^2 \, c^5 \, d^2 \, \text{Log}\left[\frac{c}{d} + x\right] \, \text{Log}[c + d \, x] - 1260 \, a^3 \, b^4 \, B^2 \, c^4 \, d^3 \, \text{Log}\left[\frac{c}{d} + x\right] \, \text{Log}[c + d \, x] +$

$36 \, b^7 \, B^2 \, c^7 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] \, \text{Log}[c + d \, x] - 252 \, a \, b^6 \, B^2 \, c^6 \, d \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] \, \text{Log}[c + d \, x] +$

$756 \, a^2 \, b^5 \, B^2 \, c^5 \, d^2 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] \, \text{Log}[c + d \, x] - 1260 \, a^3 \, b^4 \, B^2 \, c^4 \, d^3 \, \text{Log}\left[\frac{e \, (a + b \, x)}{c + d \, x}\right] \, \text{Log}[c + d \, x] +$

$36 \, b^7 \, B^2 \, c^7 \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] - 252 \, a \, b^6 \, B^2 \, c^6 \, d \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] +$

$756 \, a^2 \, b^5 \, B^2 \, c^5 \, d^2 \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] - 1260 \, a^3 \, b^4 \, B^2 \, c^4 \, d^3 \, \text{Log}\left[\frac{a}{b} + x\right] \, \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] +$

$36 \, b^4 \, B^2 \, c^4 \, \left(b^3 \, c^3 - 7 \, a \, b^2 \, c^2 \, d + 21 \, a^2 \, b \, c \, d^2 - 35 \, a^3 \, d^3\right) \, \text{PolyLog}\left[2, \frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] +$

$36 \, a^4 \, B^2 \, d^4 \, \left(-35 \, b^3 \, c^3 + 21 \, a \, b^2 \, c^2 \, d - 7 \, a^2 \, b \, c \, d^2 + a^3 \, d^3\right) \, \text{PolyLog}\left[2, \frac{b \, (c + d \, x)}{b \, c - a \, d}\right]\Bigg)$

Problem 75: Result more than twice size of optimal antiderivative.

$$\int (a\,g + b\,g\,x)^2\,(c\,i + d\,i\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right]\right)^2 dx$$

Optimal (type 4, 908 leaves, 20 steps):

$$-\frac{7\,B^2\,(b\,c - a\,d)^5\,g^2\,i^3\,x}{180\,b^3\,d^2} - \frac{7\,B^2\,(b\,c - a\,d)^4\,g^2\,i^3\,(c + d\,x)^2}{360\,b^2\,d^3} -$$

$$\frac{B^2\,(b\,c - a\,d)^3\,g^2\,i^3\,(c + d\,x)^3}{60\,b\,d^3} + \frac{B^2\,(b\,c - a\,d)^2\,g^2\,i^3\,(c + d\,x)^4}{60\,d^3} +$$

$$\frac{B^2\,(b\,c - a\,d)^6\,g^2\,i^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{36\,b^4\,d^3} - \frac{B\,(b\,c - a\,d)^4\,g^2\,i^3\,(a + b\,x)^2\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b^4\,d} -$$

$$\frac{B\,(b\,c - a\,d)^3\,g^2\,i^3\,(a + b\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b^4} -$$

$$\frac{B\,(b\,c - a\,d)^4\,g^2\,i^3\,(c + d\,x)^2\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,b^2\,d^3} +$$

$$\frac{B\,(b\,c - a\,d)^3\,g^2\,i^3\,(c + d\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{45\,b\,d^3} +$$

$$\frac{7\,B\,(b\,c - a\,d)^2\,g^2\,i^3\,(c + d\,x)^4\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,d^3} -$$

$$\frac{b\,B\,(b\,c - a\,d)\,g^2\,i^3\,(c + d\,x)^5\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{15\,d^3} +$$

$$\frac{(b\,c - a\,d)^3\,g^2\,i^3\,(a + b\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{60\,b^4} +$$

$$\frac{(b\,c - a\,d)^2\,g^2\,i^3\,(a + b\,x)^3\,(c + d\,x)\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{20\,b^3} +$$

$$\frac{(b\,c - a\,d)\,g^2\,i^3\,(a + b\,x)^3\,(c + d\,x)^2\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{10\,b^2} +$$

$$\frac{g^2\,i^3\,(a + b\,x)^3\,(c + d\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{6\,b} +$$

$$\frac{B\,(b\,c - a\,d)^5\,g^2\,i^3\,(a + b\,x)\,\left(2\,A + B + 2\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b^4\,d^2} +$$

$$\frac{B\,(b\,c - a\,d)^6\,g^2\,i^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(2\,A + 3\,B + 2\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b^4\,d^3} +$$

$$\frac{11\,B^2\,(b\,c - a\,d)^6\,g^2\,i^3\,\text{Log}[c + d\,x]}{180\,b^4\,d^3} + \frac{B^2\,(b\,c - a\,d)^6\,g^2\,i^3\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{30\,b^4\,d^3}$$

Result (type 4, 4173 leaves):

$$\frac{1}{360\,b^4\,d^3}\,g^2\,i^3\,\left(12\,b^6\,B^2\,c^6 - 84\,a\,b^5\,B^2\,c^5\,d + 12\,a^2\,b^4\,B^2\,c^4\,d^2 + 240\,a^3\,b^3\,B^2\,c^3\,d^3 - 252\,a^4\,b^2\,B^2\,c^2\,d^4 + \right.$$

$84\,a^5\,b\,B^2\,c\,d^5 - 12\,a^6\,B^2\,d^6 + 12\,A\,b^6\,B\,c^5\,d\,x - 16\,b^6\,B^2\,c^5\,d\,x - 72\,a\,A\,b^5\,B\,c^4\,d^2\,x +$

$102\,a\,b^5\,B^2\,c^4\,d^2\,x + 360\,a^2\,A^2\,b^4\,c^3\,d^3\,x - 60\,a^2\,A\,b^4\,B\,c^3\,d^3\,x - 194\,a^2\,b^4\,B^2\,c^3\,d^3\,x +$

$180\,a^3\,A\,b^3\,B\,c^2\,d^4\,x + 154\,a^3\,b^3\,B^2\,c^2\,d^4\,x - 72\,a^4\,A\,b^2\,B\,c\,d^5\,x - 54\,a^4\,b^2\,B^2\,c\,d^5\,x +$

$12\,a^5\,A\,b\,B\,d^6\,x + 8\,a^5\,b\,B^2\,d^6\,x - 6\,A\,b^6\,B\,c^4\,d^2\,x^2 + 11\,b^6\,B^2\,c^4\,d^2\,x^2 + 360\,a\,A^2\,b^5\,c^3\,d^3\,x^2 -$

$204\,a\,A\,b^5\,B\,c^3\,d^3\,x^2 + 10\,a\,b^5\,B^2\,c^3\,d^3\,x^2 + 540\,a^2\,A^2\,b^4\,c^2\,d^4\,x^2 + 180\,a^2\,A\,b^4\,B\,c^2\,d^4\,x^2 -$

$60\,a^2\,b^4\,B^2\,c^2\,d^4\,x^2 + 36\,a^3\,A\,b^3\,B\,c\,d^5\,x^2 + 46\,a^3\,b^3\,B^2\,c\,d^5\,x^2 - 6\,a^4\,A\,b^2\,B\,d^6\,x^2 -$

$7\,a^4\,b^2\,B^2\,d^6\,x^2 + 120\,A^2\,b^6\,c^3\,d^3\,x^3 - 76\,A\,b^6\,B\,c^3\,d^3\,x^3 + 18\,b^6\,B^2\,c^3\,d^3\,x^3 + 720\,a\,A^2\,b^5\,c^2\,d^4\,x^3 -$

$84\,a\,A\,b^5\,B\,c^2\,d^4\,x^3 - 30\,a\,b^5\,B^2\,c^2\,d^4\,x^3 + 360\,a^2\,A^2\,b^4\,c\,d^5\,x^3 + 156\,a^2\,A\,b^4\,B\,c\,d^5\,x^3 +$

$6\,a^2\,b^4\,B^2\,c\,d^5\,x^3 + 4\,a^3\,A\,b^3\,B\,d^6\,x^3 + 6\,a^3\,b^3\,B^2\,d^6\,x^3 + 270\,A^2\,b^6\,c^2\,d^4\,x^4 - 78\,A\,b^6\,B\,c^2\,d^4\,x^4 +$

$6\,b^6\,B^2\,c^2\,d^4\,x^4 + 540\,a\,A^2\,b^5\,c\,d^5\,x^4 + 36\,a\,A\,b^5\,B\,c\,d^5\,x^4 - 12\,a\,b^5\,B^2\,c\,d^5\,x^4 + 90\,a^2\,A^2\,b^4\,d^6\,x^4 +$

$42\,a^2\,A\,b^4\,B\,d^6\,x^4 + 6\,a^2\,b^4\,B^2\,d^6\,x^4 + 216\,A^2\,b^6\,c\,d^5\,x^5 - 24\,A\,b^6\,B\,c\,d^5\,x^5 + 144\,a\,A^2\,b^5\,d^6\,x^5 +$

$24\,a\,A\,b^5\,B\,d^6\,x^5 + 60\,A^2\,b^6\,d^6\,x^6 + 12\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\big[\frac{a}{b}+x\big] - 72\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\big[\frac{a}{b}+x\big] -$

$60\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\big[\frac{a}{b}+x\big] + 180\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}\big[\frac{a}{b}+x\big] - 72\,a^5\,b\,B^2\,c\,d^5\,\text{Log}\big[\frac{a}{b}+x\big] +$

$12\,a^6\,B^2\,d^6\,\text{Log}\big[\frac{a}{b}+x\big] + 120\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\big[\frac{a}{b}+x\big]^2 - 90\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}\big[\frac{a}{b}+x\big]^2 +$

$36\,a^5\,b\,B^2\,c\,d^5\,\text{Log}\big[\frac{a}{b}+x\big]^2 - 6\,a^6\,B^2\,d^6\,\text{Log}\big[\frac{a}{b}+x\big]^2 - 12\,b^6\,B^2\,c^6\,\text{Log}\big[\frac{c}{d}+x\big] +$

$72\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\big[\frac{c}{d}+x\big] + 60\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\big[\frac{c}{d}+x\big] - 180\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\big[\frac{c}{d}+x\big] +$

$72\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}\big[\frac{c}{d}+x\big] - 12\,a^5\,b\,B^2\,c\,d^5\,\text{Log}\big[\frac{c}{d}+x\big] + 6\,b^6\,B^2\,c^6\,\text{Log}\big[\frac{c}{d}+x\big]^2 -$

$36\,a\,b^5\,B^2\,c^5\,d\,\text{Log}\big[\frac{c}{d}+x\big]^2 + 90\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}\big[\frac{c}{d}+x\big]^2 + 6\,a^2\,b^4\,B^2\,c^4\,d^2\,\text{Log}[a+b\,x] +$

$240\,a^3\,A\,b^3\,B\,c^3\,d^3\,\text{Log}[a+b\,x] + 128\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}[a+b\,x] - 180\,a^4\,A\,b^2\,B\,c^2\,d^4\,\text{Log}[a+b\,x] -$

$186\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}[a+b\,x] + 72\,a^5\,A\,b\,B\,c\,d^5\,\text{Log}[a+b\,x] + 60\,a^5\,b\,B^2\,c\,d^5\,\text{Log}[a+b\,x] -$

$12\,a^6\,A\,B\,d^6\,\text{Log}[a+b\,x] - 8\,a^6\,B^2\,d^6\,\text{Log}[a+b\,x] - 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\big[\frac{a}{b}+x\big]\,\text{Log}[a+b\,x] +$

$180\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}\big[\frac{a}{b}+x\big]\,\text{Log}[a+b\,x] - 72\,a^5\,b\,B^2\,c\,d^5\,\text{Log}\big[\frac{a}{b}+x\big]\,\text{Log}[a+b\,x] +$

$12\,a^6\,B^2\,d^6\,\text{Log}\big[\frac{a}{b}+x\big]\,\text{Log}[a+b\,x] + 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}[a+b\,x] -$

$180\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}[a+b\,x] + 72\,a^5\,b\,B^2\,c\,d^5\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}[a+b\,x] -$

$12\,a^6\,B^2\,d^6\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}[a+b\,x] - 240\,a^3\,b^3\,B^2\,c^3\,d^3\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big] +$

$180\,a^4\,b^2\,B^2\,c^2\,d^4\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big] - 72\,a^5\,b\,B^2\,c\,d^5\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big] +$

$12\,a^6\,B^2\,d^6\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big] + 12\,b^6\,B^2\,c^5\,d\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$72\,a\,b^5\,B^2\,c^4\,d^2\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 720\,a^2\,A\,b^4\,B\,c^3\,d^3\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$60\,a^2\,b^4\,B^2\,c^3\,d^3\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 180\,a^3\,b^3\,B^2\,c^2\,d^4\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$72\,a^4\,b^2\,B^2\,c\,d^5\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 12\,a^5\,b\,B^2\,d^6\,x\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$6\,b^6\,B^2\,c^4\,d^2\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] + 720\,a\,A\,b^5\,B\,c^3\,d^3\,x^2\,\text{Log}\big[\frac{e\,(a+b\,x)}{c+d\,x}\big] -$

$$204\, a\, b^5\, B^2\, c^3\, d^3\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 1080\, a^2\, A\, b^4\, B\, c^2\, d^4\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$180\, a^2\, b^4\, B^2\, c^2\, d^4\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 36\, a^3\, b^3\, B^2\, c\, d^5\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$6\, a^4\, b^2\, B^2\, d^6\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 240\, A\, b^6\, B\, c^3\, d^3\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$76\, b^6\, B^2\, c^3\, d^3\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 1440\, a\, A\, b^5\, B\, c^2\, d^4\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$84\, a\, b^5\, B^2\, c^2\, d^4\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 720\, a^2\, A\, b^4\, B\, c\, d^5\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$156\, a^2\, b^4\, B^2\, c\, d^5\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 4\, a^3\, b^3\, B^2\, d^6\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$540\, A\, b^6\, B\, c^2\, d^4\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 78\, b^6\, B^2\, c^2\, d^4\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$1080\, a\, A\, b^5\, B\, c\, d^5\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 36\, a\, b^5\, B^2\, c\, d^5\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$180\, a^2\, A\, b^4\, B\, d^6\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 42\, a^2\, b^4\, B^2\, d^6\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$432\, A\, b^6\, B\, c\, d^5\, x^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 24\, b^6\, B^2\, c\, d^5\, x^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$288\, a\, A\, b^5\, B\, d^6\, x^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 24\, a\, b^5\, B^2\, d^6\, x^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$120\, A\, b^6\, B\, d^6\, x^6\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 240\, a^3\, b^3\, B^2\, c^3\, d^3\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$180\, a^4\, b^2\, B^2\, c^2\, d^4\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\, a^5\, b\, B^2\, c\, d^5\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$12\, a^6\, B^2\, d^6\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 360\, a^2\, b^4\, B^2\, c^3\, d^3\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$360\, a\, b^5\, B^2\, c^3\, d^3\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 540\, a^2\, b^4\, B^2\, c^2\, d^4\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$120\, b^6\, B^2\, c^3\, d^3\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 720\, a\, b^5\, B^2\, c^2\, d^4\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$360\, a^2\, b^4\, B^2\, c\, d^5\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 270\, b^6\, B^2\, c^2\, d^4\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$540\, a\, b^5\, B^2\, c\, d^5\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 90\, a^2\, b^4\, B^2\, d^6\, x^4\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$216\, b^6\, B^2\, c\, d^5\, x^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 144\, a\, b^5\, B^2\, d^6\, x^5\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$60\, b^6\, B^2\, d^6\, x^6\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 - 12\, A\, b^6\, B\, c^6\, \text{Log}[c+d\,x] + 16\, b^6\, B^2\, c^6\, \text{Log}[c+d\,x] +$$

$$72\, a\, A\, b^5\, B\, c^5\, d\, \text{Log}[c+d\,x] - 108\, a\, b^5\, B^2\, c^5\, d\, \text{Log}[c+d\,x] - 180\, a^2\, A\, b^4\, B\, c^4\, d^2\, \text{Log}[c+d\,x] +$$

$$66\, a^2\, b^4\, B^2\, c^4\, d^2\, \text{Log}[c+d\,x] + 32\, a^3\, b^3\, B^2\, c^3\, d^3\, \text{Log}[c+d\,x] - 6\, a^4\, b^2\, B^2\, c^2\, d^4\, \text{Log}[c+d\,x] +$$

$$12\, b^6\, B^2\, c^6\, \text{Log}\Big[\frac{a}{b}+x\Big]\, \text{Log}[c+d\,x] - 72\, a\, b^5\, B^2\, c^5\, d\, \text{Log}\Big[\frac{a}{b}+x\Big]\, \text{Log}[c+d\,x] +$$

$$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d\,x] - 12 \, b^6 \, B^2 \, c^6 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d\,x] +$$

$$72 \, a \, b^5 \, B^2 \, c^5 \, d \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d\,x] - 180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d\,x] -$$

$$12 \, b^6 \, B^2 \, c^6 \, \text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right] \text{Log}[c + d\,x] + 72 \, a \, b^5 \, B^2 \, c^5 \, d \, \text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right] \text{Log}[c + d\,x] -$$

$$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right] \text{Log}[c + d\,x] - 12 \, b^6 \, B^2 \, c^6 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] +$$

$$72 \, a \, b^5 \, B^2 \, c^5 \, d \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] - 180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] -$$

$$12 \, b^4 \, B^2 \, c^4 \, \left(b^2 \, c^2 - 6 \, a \, b \, c \, d + 15 \, a^2 \, d^2\right) \text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] +$$

$$12 \, a^3 \, B^2 \, d^3 \, \left(-20 \, b^3 \, c^3 + 15 \, a \, b^2 \, c^2 \, d - 6 \, a^2 \, b \, c \, d^2 + a^3 \, d^3\right) \text{PolyLog}\left[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\bigg)$$

Problem 76: Result more than twice size of optimal antiderivative.

$$\int (a\,g + b\,g\,x)\,(c\,i + d\,i\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a + b\,x)}{c + d\,x}\right]\right)^2\,dx$$

Optimal (type 4, 730 leaves, 19 steps):

$$\frac{B^2 \left(b\,c - a\,d\right)^4 g\,i^3\,x}{60\,b^3\,d} + \frac{B^2 \left(b\,c - a\,d\right)^3 g\,i^3 \left(c + d\,x\right)^2}{30\,b^2\,d^2} + \frac{B^2 \left(b\,c - a\,d\right)^2 g\,i^3 \left(c + d\,x\right)^3}{30\,b\,d^2} -$$

$$\frac{B^2 \left(b\,c - a\,d\right)^5 g\,i^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{12\,b^4\,d^2} - \frac{B \left(b\,c - a\,d\right)^4 g\,i^3 \left(a + b\,x\right) \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,b^4\,d} -$$

$$\frac{B \left(b\,c - a\,d\right)^3 g\,i^3 \left(a + b\,x\right)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,b^4} +$$

$$\frac{3\,B \left(b\,c - a\,d\right)^3 g\,i^3 \left(c + d\,x\right)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{20\,b^2\,d^2} +$$

$$\frac{B \left(b\,c - a\,d\right)^2 g\,i^3 \left(c + d\,x\right)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b\,d^2} -$$

$$\frac{B \left(b\,c - a\,d\right) g\,i^3 \left(c + d\,x\right)^4 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,d^2} + \frac{\left(b\,c - a\,d\right)^3 g\,i^3 \left(a + b\,x\right)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{20\,b^4} +$$

$$\frac{\left(b\,c - a\,d\right)^2 g\,i^3 \left(a + b\,x\right)^2 \left(c + d\,x\right) \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{10\,b^3} +$$

$$\frac{3 \left(b\,c - a\,d\right) g\,i^3 \left(a + b\,x\right)^2 \left(c + d\,x\right)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{20\,b^2} +$$

$$\frac{g\,i^3 \left(a + b\,x\right)^2 \left(c + d\,x\right)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{5\,b} -$$

$$\frac{B \left(b\,c - a\,d\right)^5 g\,i^3\,\text{Log}\left[\frac{b\,c - a\,d}{b\,(c+d\,x)}\right] \left(A + B + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,b^4\,d^2} -$$

$$\frac{11\,B^2 \left(b\,c - a\,d\right)^5 g\,i^3\,\text{Log}\left[c + d\,x\right]}{60\,b^4\,d^2} - \frac{B^2 \left(b\,c - a\,d\right)^5 g\,i^3\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{10\,b^4\,d^2}$$

Result (type 4, 3093 leaves) :

$$\frac{1}{60\,b^4\,d^2}$$

$$g\,i^3 \left(-6\,b^5\,B^2\,c^5 - 24\,a\,b^4\,B^2\,c^4\,d + 90\,a^2\,b^3\,B^2\,c^3\,d^2 - 90\,a^3\,b^2\,B^2\,c^2\,d^3 + 36\,a^4\,b\,B^2\,c\,d^4 - 6\,a^5\,B^2\,d^5 - 6\,A\,b^5\,B\right.$$

$$c^4\,d\,x + 11\,b^5\,B^2\,c^4\,d\,x + 60\,a\,A^2\,b^4\,c^3\,d^2\,x - 30\,a\,A\,b^4\,B\,c^3\,d^2\,x - 28\,a\,b^4\,B^2\,c^3\,d^2\,x + 60\,a^2\,A\,b^3\,B\,c^2\,d^3\,x +$$

$$24\,a^2\,b^3\,B^2\,c^2\,d^3\,x - 30\,a^3\,A\,b^2\,B\,c\,d^4\,x - 8\,a^3\,b^2\,B^2\,c\,d^4\,x + 6\,a^4\,A\,b\,B\,d^5\,x + a^4\,b\,B^2\,d^5\,x +$$

$$30\,A^2\,b^5\,c^3\,d^2\,x^2 - 27\,A\,b^5\,B\,c^3\,d^2\,x^2 + 8\,b^5\,B^2\,c^3\,d^2\,x^2 + 90\,a\,A^2\,b^4\,c^2\,d^3\,x^2 + 15\,a\,A\,b^4\,B\,c^2\,d^3\,x^2 -$$

$$18\,a\,b^4\,B^2\,c^2\,d^3\,x^2 + 15\,a^2\,A\,b^3\,B\,c\,d^4\,x^2 + 12\,a^2\,b^3\,B^2\,c\,d^4\,x^2 - 3\,a^3\,A\,b^2\,B\,d^5\,x^2 - 2\,a^3\,b^2\,B^2\,d^5\,x^2 +$$

$$60\,A^2\,b^5\,c^2\,d^3\,x^3 - 22\,A\,b^5\,B\,c^2\,d^3\,x^3 + 2\,b^5\,B^2\,c^2\,d^3\,x^3 + 60\,a\,A^2\,b^4\,c\,d^4\,x^3 + 20\,a\,A\,b^4\,B\,c\,d^4\,x^3 -$$

$$4\,a\,b^4\,B^2\,c\,d^4\,x^3 + 2\,a^2\,A\,b^3\,B\,d^5\,x^3 + 2\,a^2\,b^3\,B^2\,d^5\,x^3 + 45\,A^2\,b^5\,c\,d^4\,x^4 - 6\,a\,b^5\,B\,c\,d^4\,x^4 +$$

$$15\,a\,A^2\,b^4\,d^5\,x^4 + 6\,a\,A\,b^4\,B\,d^5\,x^4 + 12\,A^2\,b^5\,d^5\,x^5 - 6\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b} + x\right] -$$

$$30\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b} + x\right] + 60\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b} + x\right] - 30\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b} + x\right] +$$

$$6\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b} + x\right] + 30\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b} + x\right]^2 - 30\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b} + x\right]^2 +$$

$$15\,a^4\,b\,B^2\,c\,d^4\,Log\Big[\frac{a}{b}+x\Big]^2 - 3\,a^5\,B^2\,d^5\,Log\Big[\frac{a}{b}+x\Big]^2 + 6\,b^5\,B^2\,c^5\,Log\Big[\frac{c}{d}+x\Big] +$$

$$30\,a\,b^4\,B^2\,c^4\,d\,Log\Big[\frac{c}{d}+x\Big] - 60\,a^2\,b^3\,B^2\,c^3\,d^2\,Log\Big[\frac{c}{d}+x\Big] + 30\,a^3\,b^2\,B^2\,c^2\,d^3\,Log\Big[\frac{c}{d}+x\Big] -$$

$$6\,a^4\,b\,B^2\,c\,d^4\,Log\Big[\frac{c}{d}+x\Big] - 3\,b^5\,B^2\,c^5\,Log\Big[\frac{c}{d}+x\Big]^2 + 15\,a\,b^4\,B^2\,c^4\,d\,Log\Big[\frac{c}{d}+x\Big]^2 +$$

$$60\,a^2\,A\,b^3\,B\,c^3\,d^2\,Log[a+b\,x] + 27\,a^2\,b^3\,B^2\,c^3\,d^2\,Log[a+b\,x] - 60\,a^3\,A\,b^2\,B\,c^2\,d^3\,Log[a+b\,x] -$$

$$37\,a^3\,b^2\,B^2\,c^2\,d^3\,Log[a+b\,x] + 30\,a^4\,A\,b\,B\,c\,d^4\,Log[a+b\,x] + 11\,a^4\,b\,B^2\,c\,d^4\,Log[a+b\,x] -$$

$$6\,a^5\,A\,B\,d^5\,Log[a+b\,x] - a^5\,B^2\,d^5\,Log[a+b\,x] - 60\,a^2\,b^3\,B^2\,c^3\,d^2\,Log\Big[\frac{a}{b}+x\Big]\,Log[a+b\,x] +$$

$$60\,a^3\,b^2\,B^2\,c^2\,d^3\,Log\Big[\frac{a}{b}+x\Big]\,Log[a+b\,x] - 30\,a^4\,b\,B^2\,c\,d^4\,Log\Big[\frac{a}{b}+x\Big]\,Log[a+b\,x] +$$

$$6\,a^5\,B^2\,d^5\,Log\Big[\frac{a}{b}+x\Big]\,Log[a+b\,x] + 60\,a^2\,b^3\,B^2\,c^3\,d^2\,Log\Big[\frac{c}{d}+x\Big]\,Log[a+b\,x] -$$

$$60\,a^3\,b^2\,B^2\,c^2\,d^3\,Log\Big[\frac{c}{d}+x\Big]\,Log[a+b\,x] + 30\,a^4\,b\,B^2\,c\,d^4\,Log\Big[\frac{c}{d}+x\Big]\,Log[a+b\,x] -$$

$$6\,a^5\,B^2\,d^5\,Log\Big[\frac{c}{d}+x\Big]\,Log[a+b\,x] - 60\,a^2\,b^3\,B^2\,c^3\,d^2\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$60\,a^3\,b^2\,B^2\,c^2\,d^3\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 30\,a^4\,b\,B^2\,c\,d^4\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$6\,a^5\,B^2\,d^5\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 6\,b^5\,B^2\,c^4\,d\,x\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$120\,a\,A\,b^4\,B\,c^3\,d^2\,x\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 30\,a\,b^4\,B^2\,c^3\,d^2\,x\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$60\,a^2\,b^3\,B^2\,c^2\,d^3\,x\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 30\,a^3\,b^2\,B^2\,c\,d^4\,x\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$6\,a^4\,b\,B^2\,d^5\,x\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 60\,A\,b^5\,B\,c^3\,d^2\,x^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$27\,b^5\,B^2\,c^3\,d^2\,x^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 180\,a\,A\,b^4\,B\,c^2\,d^3\,x^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$15\,a\,b^4\,B^2\,c^2\,d^3\,x^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 15\,a^2\,b^3\,B^2\,c\,d^4\,x^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$3\,a^3\,b^2\,B^2\,d^5\,x^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 120\,A\,b^5\,B\,c^2\,d^3\,x^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$22\,b^5\,B^2\,c^2\,d^3\,x^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 120\,a\,A\,b^4\,B\,c\,d^4\,x^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$20\,a\,b^4\,B^2\,c\,d^4\,x^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 2\,a^2\,b^3\,B^2\,d^5\,x^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$90\,A\,b^5\,B\,c\,d^4\,x^4\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 6\,b^5\,B^2\,c\,d^4\,x^4\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$30\,a\,A\,b^4\,B\,d^5\,x^4\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 6\,a\,b^4\,B^2\,d^5\,x^4\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$24\,A\,b^5\,B\,d^5\,x^5\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 60\,a^2\,b^3\,B^2\,c^3\,d^2\,Log[a+b\,x]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$60\,a^3\,b^2\,B^2\,c^2\,d^3\,Log[a+b\,x]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 30\,a^4\,b\,B^2\,c\,d^4\,Log[a+b\,x]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$6\,a^5\,B^2\,d^5\,\text{Log}[a+b\,x]\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]+60\,a\,b^4\,B^2\,c^3\,d^2\,x\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$30\,b^5\,B^2\,c^3\,d^2\,x^2\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+90\,a\,b^4\,B^2\,c^2\,d^3\,x^2\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$60\,b^5\,B^2\,c^2\,d^3\,x^3\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+60\,a\,b^4\,B^2\,c\,d^4\,x^3\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$45\,b^5\,B^2\,c\,d^4\,x^4\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+15\,a\,b^4\,B^2\,d^5\,x^4\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+$

$12\,b^5\,B^2\,d^5\,x^5\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]^2+6\,A\,b^5\,B\,c^5\,\text{Log}[c+d\,x]-11\,b^5\,B^2\,c^5\,\text{Log}[c+d\,x]-$

$30\,a\,A\,b^4\,B\,c^4\,d\,\text{Log}[c+d\,x]+a\,b^4\,B^2\,c^4\,d\,\text{Log}[c+d\,x]+13\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[c+d\,x]-$

$3\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[c+d\,x]-6\,b^5\,B^2\,c^5\,\text{Log}\!\left[\dfrac{a}{b}+x\right]\text{Log}[c+d\,x]+$

$30\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\!\left[\dfrac{a}{b}+x\right]\text{Log}[c+d\,x]+6\,b^5\,B^2\,c^5\,\text{Log}\!\left[\dfrac{c}{d}+x\right]\text{Log}[c+d\,x]-$

$30\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\!\left[\dfrac{c}{d}+x\right]\text{Log}[c+d\,x]+6\,b^5\,B^2\,c^5\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x]-$

$30\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]\text{Log}[c+d\,x]+6\,b^5\,B^2\,c^5\,\text{Log}\!\left[\dfrac{a}{b}+x\right]\text{Log}\!\left[\dfrac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$

$30\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\!\left[\dfrac{a}{b}+x\right]\text{Log}\!\left[\dfrac{b\,(c+d\,x)}{b\,c-a\,d}\right]+6\,b^4\,B^2\,c^4\,(b\,c-5\,a\,d)\,\text{PolyLog}\!\left[2,\dfrac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$

$6\,a^2\,B^2\,d^2\,\left(-10\,b^3\,c^3+10\,a\,b^2\,c^2\,d-5\,a^2\,b\,c\,d^2+a^3\,d^3\right)\text{PolyLog}\!\left[2,\dfrac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Big)$

Problem 77: Result more than twice size of optimal antiderivative.

$$\int (c\,i+d\,i\,x)^3\left(A+B\,\text{Log}\!\left[\dfrac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2 dx$$

Optimal (type 4, 420 leaves, 15 steps):

$$\dfrac{5\,B^2\,(b\,c-a\,d)^3\,i^3\,x}{12\,b^3}+\dfrac{B^2\,(b\,c-a\,d)^2\,i^3\,(c+d\,x)^2}{12\,b^2\,d}+$$

$$\dfrac{5\,B^2\,(b\,c-a\,d)^4\,i^3\,\text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]}{12\,b^4\,d}-\dfrac{B\,(b\,c-a\,d)^3\,i^3\,(a+b\,x)\,\left(A+B\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{2\,b^4}-$$

$$\dfrac{B\,(b\,c-a\,d)^2\,i^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{4\,b^2\,d}-\dfrac{B\,(b\,c-a\,d)\,i^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{6\,b\,d}+$$

$$\dfrac{i^3\,(c+d\,x)^4\,\left(A+B\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{4\,d}+\dfrac{11\,B^2\,(b\,c-a\,d)^4\,i^3\,\text{Log}[c+d\,x]}{12\,b^4\,d}+$$

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

Result (type 4, 2110 leaves):

$$\frac{1}{12\,b^4\,d}$$

$$i^3 \left(-18\,b^4\,B^2\,c^4 + 54\,a\,b^3\,B^2\,c^3\,d - 60\,a^2\,b^2\,B^2\,c^2\,d^2 + 30\,a^3\,b\,B^2\,c\,d^3 - 6\,a^4\,B^2\,d^4 + 12\,A^2\,b^4\,c^3\,d\,x - 18\,A\,b^4\,B \right.$$

$$c^3\,d\,x + 7\,b^4\,B^2\,c^3\,d\,x + 36\,a\,A\,b^3\,B\,c^2\,d^2\,x - 19\,a\,b^3\,B^2\,c^2\,d^2\,x - 24\,a^2\,A\,b^2\,B\,c\,d^3\,x + 17\,a^2\,b^2\,B^2\,c\,d^3\,x +$$

$$6\,a^3\,A\,b\,B\,d^4\,x - 5\,a^3\,b\,B^2\,d^4\,x + 18\,A^2\,b^4\,c^2\,d^2\,x^2 - 9\,A\,b^4\,B\,c^2\,d^2\,x^2 + b^4\,B^2\,c^2\,d^2\,x^2 + 12\,a\,A\,b^3\,B\,c\,d^3\,x^2 -$$

$$2\,a\,b^3\,B^2\,c\,d^3\,x^2 - 3\,a^2\,A\,b^2\,B\,d^4\,x^2 + a^2\,b^2\,B^2\,d^4\,x^2 + 12\,A^2\,b^4\,c\,d^3\,x^3 - 2\,A\,b^4\,B\,c\,d^3\,x^3 +$$

$$2\,a\,A\,b^3\,B\,d^4\,x^3 + 3\,A^2\,b^4\,d^4\,x^4 - 18\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}\left[\frac{a}{b}+x\right] + 36\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}\left[\frac{a}{b}+x\right] -$$

$$24\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}\left[\frac{a}{b}+x\right] + 6\,a^4\,B^2\,d^4\,\mathrm{Log}\left[\frac{a}{b}+x\right] + 12\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2 -$$

$$18\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2 + 12\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2 - 3\,a^4\,B^2\,d^4\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2 +$$

$$18\,b^4\,B^2\,c^4\,\mathrm{Log}\left[\frac{c}{d}+x\right] - 36\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}\left[\frac{c}{d}+x\right] + 24\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}\left[\frac{c}{d}+x\right] -$$

$$6\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}\left[\frac{c}{d}+x\right] + 3\,b^4\,B^2\,c^4\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2 + 24\,a\,A\,b^3\,B\,c^3\,d\,\mathrm{Log}[a+b\,x] -$$

$$36\,a^2\,A\,b^2\,B\,c^2\,d^2\,\mathrm{Log}[a+b\,x] + 9\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}[a+b\,x] + 24\,a^3\,A\,b\,B\,c\,d^3\,\mathrm{Log}[a+b\,x] -$$

$$14\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}[a+b\,x] - 6\,a^4\,A\,B\,d^4\,\mathrm{Log}[a+b\,x] + 5\,a^4\,B^2\,d^4\,\mathrm{Log}[a+b\,x] -$$

$$24\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}[a+b\,x] + 36\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}[a+b\,x] -$$

$$24\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}[a+b\,x] + 6\,a^4\,B^2\,d^4\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}[a+b\,x] +$$

$$24\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}[a+b\,x] - 36\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}[a+b\,x] +$$

$$24\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}[a+b\,x] - 6\,a^4\,B^2\,d^4\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}[a+b\,x] -$$

$$24\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 36\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] -$$

$$24\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 6\,a^4\,B^2\,d^4\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$$

$$24\,A\,b^4\,B\,c^3\,d\,x\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 18\,b^4\,B^2\,c^3\,d\,x\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$36\,a\,b^3\,B^2\,c^2\,d^2\,x\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 24\,a^2\,b^2\,B^2\,c\,d^3\,x\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$6\,a^3\,b\,B^2\,d^4\,x\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 36\,A\,b^4\,B\,c^2\,d^2\,x^2\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$9\,b^4\,B^2\,c^2\,d^2\,x^2\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 12\,a\,b^3\,B^2\,c\,d^3\,x^2\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$3\,a^2\,b^2\,B^2\,d^4\,x^2\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 24\,A\,b^4\,B\,c\,d^3\,x^3\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$2\,b^4\,B^2\,c\,d^3\,x^3\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 2\,a\,b^3\,B^2\,d^4\,x^3\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$$

$$6\,A\,b^4\,B\,d^4\,x^4\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 24\,a\,b^3\,B^2\,c^3\,d\,\mathrm{Log}[a+b\,x]\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,\mathrm{Log}[a+b\,x]\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 24\,a^3\,b\,B^2\,c\,d^3\,\mathrm{Log}[a+b\,x]\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$$

$$6\,a^4\,B^2\,d^4\,\text{Log}[a + b\,x]\;\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big] + 12\,b^4\,B^2\,c^3\,d\,x\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]^2 +$$

$$18\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]^2 + 12\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]^2 +$$

$$3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]^2 - 6\,A\,b^4\,B\,c^4\,\text{Log}[c + d\,x] - 7\,b^4\,B^2\,c^4\,\text{Log}[c + d\,x] +$$

$$10\,a\,b^3\,B^2\,c^3\,d\,\text{Log}[c + d\,x] - 3\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[c + d\,x] + 6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{Log}[c + d\,x] -$$

$$6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}[c + d\,x] - 6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{e\,(a + b\,x)}{c + d\,x}\Big]\,\text{Log}[c + d\,x] -$$

$$6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] - 6\,b^4\,B^2\,c^4\,\text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] +$$

$$6\,a\,B^2\,d\,\big(-4\,b^3\,c^3 + 6\,a\,b^2\,c^2\,d - 4\,a^2\,b\,c\,d^2 + a^3\,d^3\big)\,\text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big)$$

Problem 78: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3\,\Big(A + B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2}{a\,g + b\,g\,x}\,dx$$

Optimal (type 4, 712 leaves, 26 steps):

$$\frac{B^2\, d\, (b\, c - a\, d)^2\, i^3\, x}{3\, b^3\, g} + \frac{B^2\, (b\, c - a\, d)^3\, i^3\, \text{Log}\left[\frac{a+b\, x}{c+d\, x}\right]}{3\, b^4\, g} -$$

$$\frac{5\, B\, d\, (b\, c - a\, d)^2\, i^3\, (a+b\, x)\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)}{3\, b^4\, g} - \frac{B\, (b\, c - a\, d)\, i^3\, (c+d\, x)^2\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)}{3\, b^2\, g} +$$

$$\frac{2\, B\, (b\, c - a\, d)^3\, i^3\, \text{Log}\left[\frac{b\, c - a\, d}{b\,(c+d\, x)}\right]\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)}{b^4\, g} +$$

$$\frac{d\, (b\, c - a\, d)^2\, i^3\, (a+b\, x)\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)^2}{b^4\, g} + \frac{(b\, c - a\, d)\, i^3\, (c+d\, x)^2\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)^2}{2\, b^2\, g} +$$

$$\frac{i^3\, (c+d\, x)^3\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)^2}{3\, b\, g} + \frac{2\, B^2\, (b\, c - a\, d)^3\, i^3\, \text{Log}[c+d\, x]}{b^4\, g} +$$

$$\frac{5\, B\, (b\, c - a\, d)^3\, i^3\left(A + B\, \text{Log}\left[\frac{e\,(a+b\, x)}{c+d\, x}\right]\right)\text{Log}\left[1 - \frac{b\,(c+d\, x)}{d\,(a+b\, x)}\right]}{3\, b^4\, g} -$$

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

$$\frac{2\, B^2\, (b\, c - a\, d)^3\, i^3\, \text{PolyLog}\left[2, \frac{d\,(a+b\, x)}{b\,(c+d\, x)}\right]}{b^4\, g} - \frac{5\, B^2\, (b\, c - a\, d)^3\, i^3\, \text{PolyLog}\left[2, \frac{b\,(c+d\, x)}{d\,(a+b\, x)}\right]}{3\, b^4\, g} +$$

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

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

Result (type 4, 5055 leaves) :

$$\frac{1}{12\, b^4\, g}$$

$$i^3\left(72\, A\, b^3\, B\, c^3 + 9\, b^3\, B^2\, c^3 - 144\, a\, A\, b^2\, B\, c^2\, d - 23\, a\, b^2\, B^2\, c^2\, d + 96\, a^2\, A\, b\, B\, c\, d^2 - 51\, a^2\, b\, B^2\, c\, d^2 - 24\, a^3\, A\, B\, \right.$$

$$d^3 + 21\, a^3\, B^2\, d^3 + 36\, A^2\, b^3\, c^2\, d\, x - 28\, A\, b^3\, B\, c^2\, d\, x + 4\, b^3\, B^2\, c^2\, d\, x - 36\, a\, A^2\, b^2\, c\, d^2\, x + 48\, a\, A\, b^2\, B\, c\, d^2\, x -$$

$$8\, a\, b^2\, B^2\, c\, d^2\, x + 12\, a^2\, A^2\, b\, d^3\, x - 20\, a^2\, A\, b\, B\, d^3\, x + 4\, a^2\, b\, B^2\, d^3\, x + 18\, A^2\, b^3\, c\, d^2\, x^2 - 4\, A\, b^3\, B\, c\, d^2\, x^2 -$$

$$6\, a\, A^2\, b^2\, d^3\, x^2 + 4\, a\, A\, b^2\, B\, d^3\, x^2 + 4\, A^2\, b^3\, d^3\, x^3 - 72\, b^3\, B^2\, c^3\, \text{Log}\left[\frac{a}{b} + x\right] + 72\, a\, A\, b^2\, B\, c^2\, d\, \text{Log}\left[\frac{a}{b} + x\right] +$$

$$116\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\left[\frac{a}{b} + x\right] - 72\, a^2\, A\, b\, B\, c\, d^2\, \text{Log}\left[\frac{a}{b} + x\right] - 30\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\left[\frac{a}{b} + x\right] +$$

$$24\, a^3\, A\, B\, d^3\, \text{Log}\left[\frac{a}{b} + x\right] + 6\, a^3\, B^2\, d^3\, \text{Log}\left[\frac{a}{b} + x\right] + 12\, A\, b^3\, B\, c^3\, \text{Log}\left[\frac{a}{b} + x\right]^2 -$$

$$36\, a\, A\, b^2\, B\, c^2\, d\, \text{Log}\left[\frac{a}{b} + x\right]^2 - 36\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\left[\frac{a}{b} + x\right]^2 + 36\, a^2\, A\, b\, B\, c\, d^2\, \text{Log}\left[\frac{a}{b} + x\right]^2 +$$

$$18\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\left[\frac{a}{b} + x\right]^2 - 12\, a^3\, A\, B\, d^3\, \text{Log}\left[\frac{a}{b} + x\right]^2 - 2\, a^3\, B^2\, d^3\, \text{Log}\left[\frac{a}{b} + x\right]^2 -$$

$$8\, b^3\, B^2\, c^3\, \text{Log}\left[\frac{a}{b} + x\right]^3 + 24\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\left[\frac{a}{b} + x\right]^3 - 24\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\left[\frac{a}{b} + x\right]^3 +$$

$$8 a^3 B^2 d^3 \log\left[\frac{a}{b} + x\right]^3 - 72 A b^3 B c^3 \log\left[\frac{c}{d} + x\right] + 54 b^3 B^2 c^3 \log\left[\frac{c}{d} + x\right] +$$

$$72 a A b^2 B c^2 d \log\left[\frac{c}{d} + x\right] - 90 a b^2 B^2 c^2 d \log\left[\frac{c}{d} + x\right] - 24 a^2 A b B c d^2 \log\left[\frac{c}{d} + x\right] +$$

$$72 a^2 b B^2 c d^2 \log\left[\frac{c}{d} + x\right] - 24 a^3 B^2 d^3 \log\left[\frac{c}{d} + x\right] + 72 b^3 B^2 c^3 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] -$$

$$72 a b^2 B^2 c^2 d \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] + 60 a^2 b B^2 c d^2 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] -$$

$$20 a^3 B^2 d^3 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] - 50 b^3 B^2 c^3 \log\left[\frac{c}{d} + x\right]^2 + 42 a b^2 B^2 c^2 d \log\left[\frac{c}{d} + x\right]^2 -$$

$$12 a^2 b B^2 c d^2 \log\left[\frac{c}{d} + x\right]^2 + 12 A^2 b^3 c^3 \log[a + b x] - 36 a A^2 b^2 c^2 d \log[a + b x] +$$

$$36 a^2 A^2 b c d^2 \log[a + b x] - 36 a^2 A b B c d^2 \log[a + b x] - 14 a^2 b B^2 c d^2 \log[a + b x] -$$
$$12 a^3 A^2 d^3 \log[a + b x] + 20 a^3 A B d^3 \log[a + b x] - 6 a^3 B^2 d^3 \log[a + b x] -$$

$$24 A b^3 B c^3 \log\left[\frac{a}{b} + x\right] \log[a + b x] + 72 a A b^2 B c^2 d \log\left[\frac{a}{b} + x\right] \log[a + b x] -$$

$$72 a^2 A b B c d^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] + 36 a^2 b B^2 c d^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] +$$

$$24 a^3 A B d^3 \log\left[\frac{a}{b} + x\right] \log[a + b x] - 20 a^3 B^2 d^3 \log\left[\frac{a}{b} + x\right] \log[a + b x] +$$

$$12 b^3 B^2 c^3 \log\left[\frac{a}{b} + x\right]^2 \log[a + b x] - 36 a b^2 B^2 c^2 d \log\left[\frac{a}{b} + x\right]^2 \log[a + b x] +$$

$$36 a^2 b B^2 c d^2 \log\left[\frac{a}{b} + x\right]^2 \log[a + b x] - 12 a^3 B^2 d^3 \log\left[\frac{a}{b} + x\right]^2 \log[a + b x] +$$

$$24 A b^3 B c^3 \log\left[\frac{c}{d} + x\right] \log[a + b x] - 72 a A b^2 B c^2 d \log\left[\frac{c}{d} + x\right] \log[a + b x] +$$

$$72 a^2 A b B c d^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] - 36 a^2 b B^2 c d^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] -$$

$$24 a^3 A B d^3 \log\left[\frac{c}{d} + x\right] \log[a + b x] + 20 a^3 B^2 d^3 \log\left[\frac{c}{d} + x\right] \log[a + b x] -$$

$$24 b^3 B^2 c^3 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] \log[a + b x] + 72 a b^2 B^2 c^2 d \log\left[\frac{a}{b} + x\right]$$

$$\log\left[\frac{c}{d} + x\right] \log[a + b x] - 72 a^2 b B^2 c d^2 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] \log[a + b x] +$$

$$24 a^3 B^2 d^3 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] \log[a + b x] + 12 b^3 B^2 c^3 \log\left[\frac{c}{d} + x\right]^2 \log[a + b x] -$$

$$36 a b^2 B^2 c^2 d \log\left[\frac{c}{d} + x\right]^2 \log[a + b x] + 36 a^2 b B^2 c d^2 \log\left[\frac{c}{d} + x\right]^2 \log[a + b x] -$$

$$12 a^3 B^2 d^3 \log\left[\frac{c}{d} + x\right]^2 \log[a + b x] - 24 A b^3 B c^3 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] +$$

$$72 a A b^2 B c^2 d \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] - 72 a^2 A b B c d^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] +$$

$$24 a^3 A B d^3 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] + 24 b^3 B^2 c^3 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] -$$

$$72 a b^2 B^2 c^2 d \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] +$$

$$72 a^2 b B^2 c d^2 \log\left[\frac{a}{b} + x\right] \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] -$$

$$24\, a^3\, B^2\, d^3\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 12\, b^3\, B^2\, c^3\, \text{Log}\Big[\frac{c}{d} + x\Big]^2\, \text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$36\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{c}{d} + x\Big]^2\, \text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 36\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\Big[\frac{c}{d} + x\Big]^2\, \text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$12\, a^3\, B^2\, d^3\, \text{Log}\Big[\frac{c}{d} + x\Big]^2\, \text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 72\, b^3\, B^2\, c^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$144\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 96\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$24\, a^3\, B^2\, d^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\, A\, b^3\, B\, c^2\, d\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 28\, b^3\, B^2\, c^2\, d\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$72\, a\, A\, b^2\, B\, c\, d^2\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 48\, a\, b^2\, B^2\, c\, d^2\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$24\, a^2\, A\, b\, B\, d^3\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 20\, a^2\, b\, B^2\, d^3\, x\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$36\, A\, b^3\, B\, c\, d^2\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 4\, b^3\, B^2\, c\, d^2\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$12\, a\, A\, b^2\, B\, d^3\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 4\, a\, b^2\, B^2\, d^3\, x^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$8\, A\, b^3\, B\, d^3\, x^3\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$72\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 24\, a^3\, B^2\, d^3\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$12\, b^3\, B^2\, c^3\, \text{Log}\Big[\frac{a}{b} + x\Big]^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 36\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{a}{b} + x\Big]^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$36\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\Big[\frac{a}{b} + x\Big]^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 12\, a^3\, B^2\, d^3\, \text{Log}\Big[\frac{a}{b} + x\Big]^2\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$72\, b^3\, B^2\, c^3\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$24\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 24\, A\, b^3\, B\, c^3\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$72\, a\, A\, b^2\, B\, c^2\, d\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\, a^2\, A\, b\, B\, c\, d^2\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$36\, a^2\, b\, B^2\, c\, d^2\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 24\, a^3\, A\, B\, d^3\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$20\, a^3\, B^2\, d^3\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 24\, b^3\, B^2\, c^3\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$72\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 72\, a^2\, b\, B^2\, c\, d^2\, \text{Log}\Big[\frac{a}{b} + x\Big]$$

$$\text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 24\, a^3\, B^2\, d^3\, \text{Log}\Big[\frac{a}{b} + x\Big]\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$24\, b^3\, B^2\, c^3\, \text{Log}\Big[\frac{c}{d} + x\Big]\, \text{Log}[a+b\,x]\, \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 72\, a\, b^2\, B^2\, c^2\, d\, \text{Log}\Big[\frac{c}{d} + x\Big]$$

$$\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$24\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] - 24\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]$$

$$\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 72\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] -$$

$$72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] +$$

$$24\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big] + 36\,b^3\,B^2\,c^2\,d\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 -$$

$$36\,a\,b^2\,B^2\,c\,d^2\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 12\,a^2\,b\,B^2\,d^3\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$18\,b^3\,B^2\,c\,d^2\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 - 6\,a\,b^2\,B^2\,d^3\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 +$$

$$4\,b^3\,B^2\,d^3\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 12\,b^3\,B^2\,c^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 -$$

$$36\,a\,b^2\,B^2\,c^2\,d\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 36\,a^2\,b\,B^2\,c\,d^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 -$$

$$12\,a^3\,B^2\,d^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2 + 28\,A\,b^3\,B\,c^3\,\text{Log}[c+d\,x] + 42\,b^3\,B^2\,c^3\,\text{Log}[c+d\,x] -$$

$$12\,a\,A\,b^2\,B\,c^2\,d\,\text{Log}[c+d\,x] - 98\,a\,b^2\,B^2\,c^2\,d\,\text{Log}[c+d\,x] + 44\,a^2\,b\,B^2\,c\,d^2\,\text{Log}[c+d\,x] -$$

$$28\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] + 12\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] +$$

$$28\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] - 12\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] +$$

$$28\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] - 12\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x] -$$

$$44\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 132\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$132\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 44\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$12\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 36\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$36\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 12\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$4\,B^2\,(b\,c-a\,d)^3\,\Big(-11+6\,\text{Log}\Big[\frac{a}{b}+x\Big]\Big)\,\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] -$$

$$24\,B\,(b\,c-a\,d)^3\,\Big(A-B\,\text{Log}\Big[\frac{a}{b}+x\Big]+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)\,\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$24\,b^3\,B^2\,c^3\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 72\,a\,b^2\,B^2\,c^2\,d\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] -$$

$$72\,a^2\,b\,B^2\,c\,d^2\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 24\,a^3\,B^2\,d^3\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] -$$

$$24\, b^3\, B^2\, c^3\, \text{PolyLog}\left[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 72\, a\, b^2\, B^2\, c^2\, d\, \text{PolyLog}\left[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] -$$

$$72\, a^2\, b\, B^2\, c\, d^2\, \text{PolyLog}\left[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 24\, a^3\, B^2\, d^3\, \text{PolyLog}\left[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

Problem 79: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{(a\,g+b\,g\,x)^2}\,dx$$

Optimal (type 4, 692 leaves, 17 steps):

$$-\frac{2\,B^2\,(b\,c-a\,d)^2\,i^3\,(c+d\,x)}{b^3\,g^2\,(a+b\,x)} - \frac{B\,d^2\,(b\,c-a\,d)\,i^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{b^4\,g^2} -$$

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

$$\frac{4\,B\,d\,(b\,c-a\,d)^2\,i^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{b^4\,g^2} +$$

$$\frac{2\,d^2\,(b\,c-a\,d)\,i^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{b^4\,g^2} - \frac{(b\,c-a\,d)^2\,i^3\,(c+d\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{b^3\,g^2\,(a+b\,x)} +$$

$$\frac{d\,i^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{2\,b^2\,g^2} + \frac{B^2\,d\,(b\,c-a\,d)^2\,i^3\,\text{Log}\,[c+d\,x]}{b^4\,g^2} +$$

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

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

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

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

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

Result (type 4, 4817 leaves):

$$\frac{A^2\,d^2\,(3\,b\,c-2\,a\,d)\,i^3\,x}{b^3\,g^2} + \frac{A^2\,d^3\,i^3\,x^2}{2\,b^2\,g^2} + \frac{-A^2\,b^3\,c^3\,i^3+3\,a\,A^2\,b^2\,c^2\,d\,i^3-3\,a^2\,A^2\,b\,c\,d^2\,i^3+a^3\,A^2\,d^3\,i^3}{b^4\,g^2\,(a+b\,x)} +$$

$$\frac{3\,\left(A^2\,b^2\,c^2\,d\,i^3-2\,a\,A^2\,b\,c\,d^2\,i^3+a^2\,A^2\,d^3\,i^3\right)\,\text{Log}\,[a+b\,x]}{b^4\,g^2} +$$

$$\left(B^2 c^3 i^3 \left(-2bc + 2ad - 2d(a+bx)\,\mathrm{Log}[a+bx] + (-2bc+2ad)\,\mathrm{Log}\left[\frac{e(a+bx)}{c+dx}\right] - \right.\right.$$

$$\left.\left. b(c+dx)\,\mathrm{Log}\left[\frac{e(a+bx)}{c+dx}\right]^2 + 2d(a+bx)\,\mathrm{Log}[c+dx]\right)\right) \Big/ \left(b(bc-ad)g^2(a+bx)\right) +$$

$$\frac{1}{g^2}2ABc^3 i^3 \left(-\frac{\left(\frac{a}{b}+x\right)\left(\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{a}{b}+x\right]^2\right)}{(a+bx)^2\,\mathrm{Log}\left[\frac{a}{b}+x\right]} - \frac{\dfrac{b\left(\frac{c}{d}+x\right)\mathrm{Log}\left[\frac{c}{d}+x\right]}{\left(-a+\frac{bc}{d}\right)^2\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right)} + \dfrac{\mathrm{Log}\left[1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right]}{-a+\frac{bc}{d}}}{b} - \right.$$

$$\left. \frac{-\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]}{b(a+bx)} \right) +$$

$$\frac{1}{g^2}2ABd^3 i^3 \left(-\frac{2a\left(\frac{a}{b}+x\right)\left(-1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{b^3} + \frac{3a^2\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2}{2b^4} + \frac{a^3\left(1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{b^4(a+bx)} + \right.$$

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

$$\left(a^3\left((-bc+ad)\,\mathrm{Log}\left[\frac{c}{d}+x\right]+d(a+bx)\left(\mathrm{Log}[a+bx]-\mathrm{Log}[c+dx]\right)\right)\right)\Big/$$

$$\left(b^4(bc-ad)(a+bx)\right) - \frac{-\frac{1}{2}d\left(-\frac{cx}{d^2}+\frac{x^2}{2d}+\frac{c^2\,\mathrm{Log}[c+dx]}{d^3}\right)+\frac{1}{2}x^2\,\mathrm{Log}\left[\frac{c+dx}{d}\right]}{b^2} + \frac{1}{2b^4}\left(-4abx + \right.$$

$$\left. b^2x^2+\frac{2a^3}{a+bx}+6a^2\,\mathrm{Log}[a+bx]\right)\left(-\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right) -$$

$$\left.\frac{3a^2\left(\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}\left[\frac{d(a+bx)}{-bc+ad}\right]+\mathrm{PolyLog}\left[2,\frac{b(c+dx)}{bc-ad}\right]\right)}{b^4}\right) + \frac{1}{g^2}6ABcd^2 i^3$$

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

$$\left(a^2\left((-bc+ad)\,\mathrm{Log}\left[\frac{c}{d}+x\right]+d(a+bx)\left(\mathrm{Log}[a+bx]-\mathrm{Log}[c+dx]\right)\right)\right)\Big/$$

$$\left(b^3(bc-ad)(a+bx)\right) + \frac{1}{b^3}$$

$$\left(bx-\frac{a^2}{a+bx}-2a\,\mathrm{Log}[a+bx]\right)\left(-\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right)\right) +$$

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

$$\frac{1}{g^2}6\,A\,B\,c^2\,d\,i^3\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^2}+\frac{a\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2\,(a+b\,x)}+\right.$$

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

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

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

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

$$\frac{1}{g^2}B^2\,d^3\,i^3\left(\frac{a^2\,\text{Log}\left[\frac{a}{b}+x\right]^3}{b^4}-\frac{2\,a\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^4}+\right.$$

$$\frac{a^3\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^4\,(a+b\,x)}+\frac{1}{4\,b^4}$$

$$(a+b\,x)\left(-7\,a+b\,x+(6\,a-2\,b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]-2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)-$$

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

$$(c+d\,x)\left(-7\,c+d\,x+(6\,c-2\,d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]-2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

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

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

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Big)\Big/$$

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

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

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

$$\left(a^3\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\right)\right)\Big/$$

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

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

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

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

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

$$b^2\,d^2\,x^2\,\text{Log}\left[\frac{c}{d}+x\right]+a^2\,d^2\,\text{Log}[a+b\,x]+b^2\,c^2\,\text{Log}[c+d\,x]+2\,a\,b\,c\,d\,\text{Log}[c+d\,x]+$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 80: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{(a\,g + b\,g\,x)^3}\,dx$$

Optimal (type 4, 604 leaves, 13 steps):

$$-\frac{4 B^2 d \left(b c - a d\right) i^3 \left(c + d x\right)}{b^3 g^3 \left(a + b x\right)} - \frac{B^2 \left(b c - a d\right) i^3 \left(c + d x\right)^2}{4 b^2 g^3 \left(a + b x\right)^2} -$$

$$\frac{4 B d \left(b c - a d\right) i^3 \left(c + d x\right) \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)}{b^3 g^3 \left(a + b x\right)} - \frac{B \left(b c - a d\right) i^3 \left(c + d x\right)^2 \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)}{2 b^2 g^3 \left(a + b x\right)^2} +$$

$$\frac{2 B d^2 \left(b c - a d\right) i^3 \log\left[\frac{b c - a d}{b \left(c + d x\right)}\right] \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)}{b^4 g^3} + \frac{d^3 i^3 \left(a + b x\right) \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)^2}{b^4 g^3} -$$

$$\frac{2 d \left(b c - a d\right) i^3 \left(c + d x\right) \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)^2}{b^3 g^3 \left(a + b x\right)} - \frac{\left(b c - a d\right) i^3 \left(c + d x\right)^2 \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)^2}{2 b^2 g^3 \left(a + b x\right)^2} -$$

$$\frac{3 d^2 \left(b c - a d\right) i^3 \left(A + B \log\left[\frac{e \left(a + b x\right)}{c + d x}\right]\right)^2 \log\left[1 - \frac{b \left(c + d x\right)}{d \left(a + b x\right)}\right]}{b^4 g^3} +$$

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

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

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

Result (type 4, 5661 leaves):

$$\frac{A^2 d^3 i^3 x}{b^3 g^3} - \frac{A^2 \left(b^3 c^3 - 3 a b^2 c^2 d + 3 a^2 b c d^2 - a^3 d^3\right) i^3}{2 b^4 g^3 \left(a + b x\right)^2} -$$

$$\frac{3 \left(A^2 b^2 c^2 d i^3 - 2 a A^2 b c d^2 i^3 + a^2 A^2 d^3 i^3\right)}{b^4 g^3 \left(a + b x\right)} - \frac{3 \left(-A^2 b c d^2 i^3 + a A^2 d^3 i^3\right) \log\left[a + b x\right]}{b^4 g^3} -$$

$$\left(B^2 c^3 i^3 \left(b^2 c^2 - 8 a b c d + 7 a^2 d^2 - 6 b^2 c d x + 6 a b d^2 x - 6 d^2 \left(a + b x\right)^2 \log\left[a + b x\right] + \right.\right.$$

$$2 \left(b c - a d\right) \left(b c - 3 a d - 2 b d x\right) \log\left[\frac{e \left(a + b x\right)}{c + d x}\right] + 2 b \left(c + d x\right) \left(b c - 2 a d - b d x\right)$$

$$\left.\left.\log\left[\frac{e \left(a + b x\right)}{c + d x}\right]^2 + 6 a^2 d^2 \log\left[c + d x\right] + 12 a b d^2 x \log\left[c + d x\right] + 6 b^2 d^2 x^2 \log\left[c + d x\right]\right)\right) \Big/$$

$$\left(4 b \left(b c - a d\right)^2 g^3 \left(a + b x\right)^2\right) + \frac{1}{g^3} 2 A B c^3 i^3 \left(-\frac{\left(\frac{a}{b} + x\right) \left(2 \log\left[\frac{a}{b} + x\right] + 4 \log\left[\frac{a}{b} + x\right]^2\right)}{8 \left(a + b x\right)^3 \log\left[\frac{a}{b} + x\right]} - \frac{1}{2 b}\right.$$

$$\left(\frac{b \left(\frac{c}{d} + x\right)}{\left(-a + \frac{b c}{d}\right)^3 \left(1 - \frac{b \left(\frac{c}{d} + x\right)}{-a + \frac{b c}{d}}\right)} - \left(\frac{b^2 \left(\frac{c}{d} + x\right)^2}{\left(-a + \frac{b c}{d}\right)^4 \left(1 - \frac{b \left(\frac{c}{d} + x\right)}{-a + \frac{b c}{d}}\right)^2} + \frac{2 b \left(\frac{c}{d} + x\right)}{\left(-a + \frac{b c}{d}\right)^3 \left(1 - \frac{b \left(\frac{c}{d} + x\right)}{-a + \frac{b c}{d}}\right)}\right)\right) \log\left[\frac{c}{d} + x\right] -$$

$$\left. \frac{\operatorname{Log}\left[1 - \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right]}{\left(-a+\frac{bc}{d}\right)^2} - \frac{-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]}{2b\,(a+bx)^2} \right] +$$

$$\frac{1}{g^3} 6\,A\,B\,c^2\,d\,i^3 \left(-\frac{1+\operatorname{Log}\left[\frac{a}{b}+x\right]}{b^2\,(a+bx)} + \frac{a\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{4b^2\,(a+bx)^2} - \right.$$

$$\frac{(-bc+ad)\,\operatorname{Log}\left[\frac{c}{d}+x\right] + d\,(a+bx)\,\left(\operatorname{Log}[a+bx] - \operatorname{Log}[c+dx]\right)}{b^2\,(bc-ad)\,(a+bx)} -$$

$$\frac{a\left(\operatorname{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+bx)\,(bc-ad+d\,(a+bx)\,\operatorname{Log}[a+bx]-d\,(a+bx)\,\operatorname{Log}[c+dx])}{(bc-ad)^2}\right)}{2b^2\,(a+bx)^2} -$$

$$\left. \frac{(a+2bx)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right)}{2b^2\,(a+bx)^2} \right) +$$

$$\frac{1}{g^3} 2\,A\,B\,d^3\,i^3 \left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{b^3} - \frac{3a\,\operatorname{Log}\left[\frac{a}{b}+x\right]^2}{2b^4} - \frac{3a^2\left(1+\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{b^4\,(a+bx)} + \right.$$

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

$$\left(3a^2\left((-bc+ad)\,\operatorname{Log}\left[\frac{c}{d}+x\right] + d\,(a+bx)\,\left(\operatorname{Log}[a+bx]-\operatorname{Log}[c+dx]\right)\right)\right)\Bigg/$$

$$\left(b^4\,(bc-ad)\,(a+bx)\right) - \frac{a^3\left(\operatorname{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+bx)\,(bc-ad+d\,(a+bx)\,\operatorname{Log}[a+bx]-d\,(a+bx)\,\operatorname{Log}[c+dx])}{(bc-ad)^2}\right)}{2b^4\,(a+bx)^2} -$$

$$\frac{1}{2b^4}\left(-2bx + \frac{a^2\,(5a+6bx)}{(a+bx)^2} + 6a\,\operatorname{Log}[a+bx]\right)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \right.$$

$$\left. \operatorname{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right) + \left. \frac{3a\left(\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}\left[\frac{d\,(a+bx)}{-bc+ad}\right] + \operatorname{PolyLog}\left[2,\frac{b\,(c+dx)}{bc-ad}\right]\right)}{b^4} \right) +$$

$$\frac{1}{g^3} 6\,A\,B\,c\,d^2\,i^3 \left(\frac{\operatorname{Log}\left[\frac{a}{b}+x\right]^2}{2b^3} + \frac{2a\left(1+\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+bx)} - \frac{a^2\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{4b^3\,(a+bx)^2} + \right.$$

$$\left(2a\left((-bc+ad)\,\operatorname{Log}\left[\frac{c}{d}+x\right] + d\,(a+bx)\,\left(\operatorname{Log}[a+bx]-\operatorname{Log}[c+dx]\right)\right)\right)\Bigg/$$

$$\left(b^3\,(bc-ad)\,(a+bx)\right) + \frac{a^2\left(\operatorname{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+bx)\,(bc-ad+d\,(a+bx)\,\operatorname{Log}[a+bx]-d\,(a+bx)\,\operatorname{Log}[c+dx])}{(bc-ad)^2}\right)}{2b^3\,(a+bx)^2} +$$

$$\frac{1}{2b^3}\left(\frac{a\,(3a+4bx)}{(a+bx)^2} + 2\operatorname{Log}[a+bx]\right)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right) -$$

$$\frac{\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\operatorname{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}\Bigg)\;+$$

$$\frac{1}{g^3}\;3\,B^2\,c^2\,d\,i^3\left(-\frac{2+2\operatorname{Log}\left[\frac{a}{b}+x\right]+\operatorname{Log}\left[\frac{a}{b}+x\right]^2}{b^2\,(a+b\,x)}+\frac{a\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]+2\operatorname{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^2\,(a+b\,x)^2}+\right.$$

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

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

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

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

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

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

$$d\,x])\Big)\Big)-2\operatorname{Log}\left[\frac{a}{b}+x\right]\left((b\,c-a\,d)\operatorname{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\operatorname{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-$$

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

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

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

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

$$\operatorname{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\Big)\Big)\Big)\Big)\Big/\left(4\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)\right)+$$

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

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

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

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

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

$$\frac{1}{g^3}\,B^2\,d^3\,i^3\left(-\frac{a\,\text{Log}\big[\frac{a}{b}+x\big]^3}{b^4}+\frac{(a+b\,x)\,\Big(2-2\,\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{a}{b}+x\big]^2\Big)}{b^4}-\right.$$

$$\frac{3\,a^2\,\Big(2+2\,\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{a}{b}+x\big]^2\Big)}{b^4\,(a+b\,x)}+\frac{a^3\,\Big(1+2\,\text{Log}\big[\frac{a}{b}+x\big]+2\,\text{Log}\big[\frac{a}{b}+x\big]^2\Big)}{4\,b^4\,(a+b\,x)^2}+$$

$$\frac{(c+d\,x)\,\Big(2-2\,\text{Log}\big[\frac{c}{d}+x\big]+\text{Log}\big[\frac{c}{d}+x\big]^2\Big)}{b^3\,d}-\frac{1}{2\,b^4}\left(-2\,b\,x+\frac{a^2\,(5\,a+6\,b\,x)}{(a+b\,x)^2}+6\,a\,\text{Log}\,[a+b\,x]\right)$$

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

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

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

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

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

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

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

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

$$\frac{a^3\,\big(1+2\,\text{Log}\big[\frac{a}{b}+x\big]\big)}{4\,b^4\,(a+b\,x)^2}-\frac{\big(\frac{c}{d}+x\big)\,\big(-1+\text{Log}\big[\frac{c}{d}+x\big]\big)}{b^3}-$$

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

$$(a+b\,x)\Big)-\frac{a^3\left(\text{Log}\big[\frac{c}{d}+x\big]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}\,[a+b\,x]-d\,(a+b\,x)\,\text{Log}\,[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^4\,(a+b\,x)^2}+$$

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

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

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

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

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

$$d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right) - 2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) \Big/$$

$$\left(2\,b^4\,(b\,c-a\,d)\,(a+b\,x)\right) + \left(a^3\,\left(-d\,(-b\,c+a\,d)\,(a+b\,x) + (b\,c-a\,d)^2\right.\right.$$

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

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

$$2\,d\,(a+b\,x)\,\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right)\right) \Big/$$

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

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

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

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

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

$$\frac{a^2\,\left(1 + 2\,\text{Log}\left[\frac{a}{b}+x\right] + 2\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^3\,(a+b\,x)^2} + \frac{1}{2\,b^3}$$

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\text{Log}[a+b x]-\text{Log}[c+d x]\right)\right)-2 \text{Log}\left[\frac{a}{b}+x\right] \left((b c-a d) \text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$d (a+b x) \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]\right)-2 d (a+b x) \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]\right)\right)\Big/$$

$$\left(b^3 (b c-a d) (a+b x)\right)\right)-\left(a^2 \left(-d (-b c+a d) (a+b x)+(b c-a d)^2\right.\right.$$

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

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

$$2 d (a+b x) \left(\text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]+\text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]\right)\right)\right)\right)\Big/$$

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

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

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

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

Problem 81: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{(a\,g + b\,g\,x)^5}\,dx$$

Optimal (type 3, 147 leaves, 3 steps):

$$-\frac{B^2\,i^3\,(c+d\,x)^4}{32\,(b\,c - a\,d)\,g^5\,(a+b\,x)^4} - \frac{B\,i^3\,(c+d\,x)^4\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{8\,(b\,c - a\,d)\,g^5\,(a+b\,x)^4} - \frac{i^3\,(c+d\,x)^4\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{4\,(b\,c - a\,d)\,g^5\,(a+b\,x)^4}$$

Result (type 3, 327 leaves):

$$\frac{1}{32\,b^4\,(b\,c - a\,d)\,g^5\,(a+b\,x)^4}$$

$$i^3 \left(-\left(8\,A^2 + 4\,A\,B + B^2\right)(b\,c - a\,d)^4 + 4\left(8\,A^2 + 4\,A\,B + B^2\right)d\,(-b\,c + a\,d)^3\,(a+b\,x) - \right.$$

$$6\left(8\,A^2 + 4\,A\,B + B^2\right)d^2\,(b\,c - a\,d)^2\,(a+b\,x)^2 + 4\left(8\,A^2 + 4\,A\,B + B^2\right)d^3\,(-b\,c + a\,d)\,(a+b\,x)^3 -$$

$$4\,B\,(4\,A + B)\,d^4\,(a+b\,x)^4\,\text{Log}\,[a+b\,x] - 4\,B\,(4\,A + B)\,(b\,c - a\,d)$$

$$\left((b\,c - a\,d)^3 + 4\,d\,(b\,c - a\,d)^2\,(a+b\,x) + 6\,d^2\,(b\,c - a\,d)\,(a+b\,x)^2 + 4\,d^3\,(a+b\,x)^3\right)$$

$$\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 8\,b^4\,B^2\,(c+d\,x)^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 4\,B\,(4\,A + B)\,d^4\,(a+b\,x)^4\,\text{Log}\,[c+d\,x] \left.\right)$$

Problem 84: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^3 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{c\,i + d\,i\,x}\,dx$$

Optimal (type 4, 718 leaves, 25 steps):

$$\frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,x}{3\,d^3\,i} + \frac{B^2\,(b\,c-a\,d)^3\,g^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{3\,d^4\,i} +$$

$$\frac{7\,B\,(b\,c-a\,d)^2\,g^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{3\,d^3\,i} - \frac{b^2\,B\,(b\,c-a\,d)\,g^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{3\,d^4\,i} +$$

$$\frac{6\,B\,(b\,c-a\,d)^3\,g^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{d^4\,i} +$$

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

$$\frac{3\,b^2\,(b\,c-a\,d)\,g^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{2\,d^4\,i} + \frac{b^3\,g^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{3\,d^4\,i} +$$

$$\frac{(b\,c-a\,d)^3\,g^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{d^4\,i} - \frac{2\,B^2\,(b\,c-a\,d)^3\,g^3\,\text{Log}[c+d\,x]}{d^4\,i} -$$

$$\frac{7\,B\,(b\,c-a\,d)^3\,g^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{3\,d^4\,i} + \frac{6\,B^2\,(b\,c-a\,d)^3\,g^3\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i} +$$

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

$$\frac{7\,B^2\,(b\,c-a\,d)^3\,g^3\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{3\,d^4\,i} - \frac{2\,B^2\,(b\,c-a\,d)^3\,g^3\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i}$$

Result (type 4, 5057 leaves) :

$$\frac{1}{12\,d^4\,i}\,g^3\,\Big(24\,A\,b^3\,B\,c^3 + 45\,b^3\,B^2\,c^3 - 96\,a\,A\,b^2\,B\,c^2\,d - 155\,a\,b^2\,B^2\,c^2\,d + 144\,a^2\,A\,b\,B\,c\,d^2 + 129\,a^2\,b\,B^2\,c\,d^2 -$$

$$72\,a^3\,A\,B\,d^3 - 63\,a^3\,B^2\,d^3 + 12\,A^2\,b^3\,c^2\,d\,x + 20\,A\,b^3\,B\,c^2\,d\,x + 4\,b^3\,B^2\,c^2\,d\,x - 36\,a\,A^2\,b^2\,c\,d^2\,x -$$

$$48\,a\,A\,b^2\,B\,c\,d^2\,x - 8\,a\,b^2\,B^2\,c\,d^2\,x + 36\,a^2\,A^2\,b\,d^3\,x + 28\,a^2\,A\,b\,B\,d^3\,x + 4\,a^2\,b\,B^2\,d^3\,x - 6\,A^2\,b^3\,c\,d^2\,x^2 -$$

$$4\,A\,b^3\,B\,c\,d^2\,x^2 + 18\,a\,A^2\,b^2\,d^3\,x^2 + 4\,a\,A\,b^2\,B\,d^3\,x^2 + 4\,A^2\,b^3\,d^3\,x^3 - 24\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right] +$$

$$24\,a\,A\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{a}{b}+x\right] + 116\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{a}{b}+x\right] - 72\,a^2\,A\,b\,B\,c\,d^2\,\text{Log}\left[\frac{a}{b}+x\right] -$$

$$198\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{a}{b}+x\right] + 72\,a^3\,A\,B\,d^3\,\text{Log}\left[\frac{a}{b}+x\right] + 126\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right] -$$

$$12\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 42\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 50\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]^2 -$$

$$24\,A\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right] - 18\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right] + 72\,a\,A\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right] +$$

$$30\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right] - 72\,a^2\,A\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right] + 72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right] -$$

$$72\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right] + 24\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{c}{d}+x\right] - 72\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{c}{d}+x\right] +$$

$$60\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{c}{d}+x\right] + 28\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{c}{d}+x\right] +$$

$$12\,A\,b^3\,B\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 2\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 36\,a\,A\,b^2\,B\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2 +$$

$18\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2 + 36\,a^2\,A\,b\,B\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 36\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 -$

$12\,a^3\,A\,B\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2 + 8\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^3 - 24\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]^3 +$

$24\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^3 - 8\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^3 + 12\,a^2\,A\,b\,B\,c\,d^2\,\text{Log}[a+b\,x] +$

$10\,a^2\,b\,B^2\,c\,d^2\,\text{Log}[a+b\,x] - 28\,a^3\,A\,B\,d^3\,\text{Log}[a+b\,x] - 30\,a^3\,B^2\,d^3\,\text{Log}[a+b\,x] -$

$12\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x] + 28\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x] +$

$12\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x] - 28\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x] -$

$12\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 36\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] -$

$36\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 12\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$

$24\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 96\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 144\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$

$72\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 24\,A\,b^3\,B\,c^2\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 20\,b^3\,B^2\,c^2\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$

$72\,a\,A\,b^2\,B\,c\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 48\,a\,b^2\,B^2\,c\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$72\,a^2\,A\,b\,B\,d^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 28\,a^2\,b\,B^2\,d^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] -$

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

$36\,a\,A\,b^2\,B\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 4\,a\,b^2\,B^2\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] + 8\,A\,b^3\,B\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$24\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$72\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 24\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$72\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$12\,b^3\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 36\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$36\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 12\,a^3\,B^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$12\,a^2\,b\,B^2\,c\,d^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] - 28\,a^3\,B^2\,d^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right] +$

$12\,b^3\,B^2\,c^2\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 - 36\,a\,b^2\,B^2\,c\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$

$36\,a^2\,b\,B^2\,d^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 - 6\,b^3\,B^2\,c\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 +$

$18\,a\,b^2\,B^2\,d^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 + 4\,b^3\,B^2\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2 - 12\,A^2\,b^3\,c^3\,\text{Log}[c+d\,x] -$

$$20\,A\,b^3\,B\,c^3\,Log[c+d\,x] + 18\,b^3\,B^2\,c^3\,Log[c+d\,x] + 36\,a\,A^2\,b^2\,c^2\,d\,Log[c+d\,x] +$$

$$36\,a\,A\,b^2\,B\,c^2\,d\,Log[c+d\,x] - 74\,a\,b^2\,B^2\,c^2\,d\,Log[c+d\,x] - 36\,a^2\,A^2\,b\,c\,d^2\,Log[c+d\,x] +$$

$$44\,a^2\,b\,B^2\,c\,d^2\,Log[c+d\,x] + 12\,a^3\,A^2\,d^3\,Log[c+d\,x] + 24\,A\,b^3\,B\,c^3\,Log\Big[\frac{a}{b}+x\Big]\,Log[c+d\,x] +$$

$$20\,b^3\,B^2\,c^3\,Log\Big[\frac{a}{b}+x\Big]\,Log[c+d\,x] - 72\,a\,A\,b^2\,B\,c^2\,d\,Log\Big[\frac{a}{b}+x\Big]\,Log[c+d\,x] -$$

$$36\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{a}{b}+x\Big]\,Log[c+d\,x] + 72\,a^2\,A\,b\,B\,c\,d^2\,Log\Big[\frac{a}{b}+x\Big]\,Log[c+d\,x] -$$

$$24\,a^3\,A\,B\,d^3\,Log\Big[\frac{a}{b}+x\Big]\,Log[c+d\,x] - 12\,b^3\,B^2\,c^3\,Log\Big[\frac{a}{b}+x\Big]^2\,Log[c+d\,x] +$$

$$36\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{a}{b}+x\Big]^2\,Log[c+d\,x] - 36\,a^2\,b\,B^2\,c\,d^2\,Log\Big[\frac{a}{b}+x\Big]^2\,Log[c+d\,x] +$$

$$12\,a^3\,B^2\,d^3\,Log\Big[\frac{a}{b}+x\Big]^2\,Log[c+d\,x] - 24\,A\,b^3\,B\,c^3\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] -$$

$$20\,b^3\,B^2\,c^3\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] + 72\,a\,A\,b^2\,B\,c^2\,d\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] +$$

$$36\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] - 72\,a^2\,A\,b\,B\,c\,d^2\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] +$$

$$24\,a^3\,A\,B\,d^3\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] + 24\,b^3\,B^2\,c^3\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] -$$

$$72\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] +$$

$$72\,a^2\,b\,B^2\,c\,d^2\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] -$$

$$24\,a^3\,B^2\,d^3\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{c}{d}+x\Big]\,Log[c+d\,x] - 12\,b^3\,B^2\,c^3\,Log\Big[\frac{c}{d}+x\Big]^2\,Log[c+d\,x] +$$

$$36\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{c}{d}+x\Big]^2\,Log[c+d\,x] - 36\,a^2\,b\,B^2\,c\,d^2\,Log\Big[\frac{c}{d}+x\Big]^2\,Log[c+d\,x] +$$

$$12\,a^3\,B^2\,d^3\,Log\Big[\frac{c}{d}+x\Big]^2\,Log[c+d\,x] - 24\,A\,b^3\,B\,c^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] -$$

$$20\,b^3\,B^2\,c^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] + 72\,a\,A\,b^2\,B\,c^2\,d\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] +$$

$$36\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] - 72\,a^2\,A\,b\,B\,c\,d^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] +$$

$$24\,a^3\,A\,B\,d^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] + 24\,b^3\,B^2\,c^3\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] -$$

$$72\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] + 72\,a^2\,b\,B^2\,c\,d^2\,Log\Big[\frac{a}{b}+x\Big]$$

$$Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] - 24\,a^3\,B^2\,d^3\,Log\Big[\frac{a}{b}+x\Big]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] -$$

$$24\,b^3\,B^2\,c^3\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] + 72\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{c}{d}+x\Big]$$

$$Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] - 72\,a^2\,b\,B^2\,c\,d^2\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] +$$

$$24\,a^3\,B^2\,d^3\,Log\Big[\frac{c}{d}+x\Big]\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,Log[c+d\,x] - 12\,b^3\,B^2\,c^3\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2\,Log[c+d\,x] +$$

$$36\,a\,b^2\,B^2\,c^2\,d\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2\,Log[c+d\,x] - 36\,a^2\,b\,B^2\,c\,d^2\,Log\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2\,Log[c+d\,x] +$$

$$12\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2\,\text{Log}\,[c+d\,x] - 24\,A\,b^3\,B\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$44\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 72\,a\,A\,b^2\,B\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$132\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 72\,a^2\,A\,b\,B\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$132\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 24\,a^3\,A\,B\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$44\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 12\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$36\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 36\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$12\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 24\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$72\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$24\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 24\,b^3\,B^2\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]$$

$$\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 72\,a\,b^2\,B^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$72\,a^2\,b\,B^2\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$24\,a^3\,B^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$4\,B\,(b\,c-a\,d)^3\,\Big(6\,A+11\,B+6\,B\,\text{Log}\Big[\frac{c}{d}+x\Big]+6\,B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)\,\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] -$$

$$24\,B^2\,(b\,c-a\,d)^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$24\,b^3\,B^2\,c^3\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 72\,a\,b^2\,B^2\,c^2\,d\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$72\,a^2\,b\,B^2\,c\,d^2\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 24\,a^3\,B^2\,d^3\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$24\,b^3\,B^2\,c^3\,\text{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 72\,a\,b^2\,B^2\,c^2\,d\,\text{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$72\,a^2\,b\,B^2\,c\,d^2\,\text{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 24\,a^3\,B^2\,d^3\,\text{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)$$

Problem 85: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(a\,g + b\,g\,x\right)^2 \left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{c\,i + d\,i\,x}\,dx$$

Optimal (type 4, 536 leaves, 15 steps):

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

$$\frac{4\,B\,(b\,c - a\,d)^2\,g^2\,\text{Log}\left[\frac{b\,c - a\,d}{b\,(c+d\,x)}\right]\,\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{d^3\,i} -$$

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

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

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

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

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

Result (type 4, 2562 leaves):

$$\frac{1}{12\,d^3\,i}\,g^2\,\left(-12\,A^2\,b\,d\,(b\,c - 2\,a\,d)\,x + 6\,A^2\,b^2\,d^2\,x^2 + 12\,A^2\,(b\,c - a\,d)^2\,\text{Log}\,[\,c+d\,x\,] + \right.$$

$$12\,A\,B\,\left(-2\,b^2\,c^2 + 2\,a\,b\,c\,d - b^2\,c\,d\,x + a\,b\,d^2\,x + 2\,b^2\,c^2\,\text{Log}\left[\frac{c}{d} + x\right] - b^2\,c^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 - \right.$$

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

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

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

$$12\,a^2\,A\,B\,d^2\,\left(\text{Log}\left[\frac{c}{d} + x\right]^2 + 2\,\left(\text{Log}\left[\frac{a}{b} + x\right] - \text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)\,\text{Log}\,[\,c+d\,x\,] - \right.$$

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

$$24\,a\,A\,B\,d\,\left(-2\,d\,(a+b\,x)\,\left(-1 + \text{Log}\left[\frac{a}{b} + x\right]\right) + 2\,b\,(c+d\,x)\,\left(-1 + \text{Log}\left[\frac{c}{d} + x\right]\right) - \right.$$

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

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

$$4\,a^2\,B^2\,d^2\left(\mathrm{Log}\Big[\frac{c}{d}+x\Big]^3+3\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2\left(-\mathrm{Log}\Big[\frac{a}{b}+x\Big]+\mathrm{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\right)+\right.$$

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

$$3\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2\mathrm{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+6\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]\,\mathrm{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+$$

$$3\left(\mathrm{Log}\Big[\frac{a}{b}+x\Big]-\mathrm{Log}\Big[\frac{c}{d}+x\Big]-\mathrm{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\right)$$

$$\left(\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2-2\left(\mathrm{Log}\Big[\frac{a}{b}+x\Big]\,\mathrm{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+\mathrm{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\right)\right)+6\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]$$

$$\left.\mathrm{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-6\,\mathrm{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-6\,\mathrm{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\right)+$$

$$8\,a\,B^2\,d\left(3\,d\,(a+b\,x)\left(2-2\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]+\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2\right)-b\,c\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]^3+\right.$$

$$3\,b\,(c+d\,x)\left(2-2\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]+\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2\right)+$$

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

$$6\left(a\,d+2\,b\,d\,x-b\,d\,x\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]-b\,c\,\mathrm{Log}[c+d\,x]+\right.$$

$$\mathrm{Log}\Big[\frac{a}{b}+x\Big]\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]+(b\,c-a\,d)\,\mathrm{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\right)+$$

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

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

$$\left.2\,b\,c\left(\mathrm{Log}\Big[\frac{a}{b}+x\Big]\,\mathrm{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+\mathrm{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\right)\right)-$$

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

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

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

$$B^2\left(12\,b\,c\,d\,(a+b\,x)\left(2-2\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]+\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2\right)+3\,d^2\,(a+b\,x)\right.$$

$$\left(7\,a-b\,x+(-6\,a+2\,b\,x)\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]+2\,(a-b\,x)\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]^2\right)-$$

$$4 b^2 c^2 \operatorname{Log}\left[\frac{c}{d}+x\right]^3 + 12 b^2 c \, (c+d x) \left(2 - 2 \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right]^2\right) +$$

$$3 b^2 \, (c+d x) \left(7 c - d x + (-6 c + 2 d x) \operatorname{Log}\left[\frac{c}{d}+x\right] + 2 \, (c-d x) \operatorname{Log}\left[\frac{c}{d}+x\right]^2\right) -$$

$$6 b^2 \left(-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{e\,(a+b x)}{c+d x}\right]\right)^2 \left(d x \, (-2 c + d x) + 2 c^2 \operatorname{Log}[c+d x]\right) +$$

$$6 \left(\operatorname{Log}\left[\frac{a}{b}+x\right] - \operatorname{Log}\left[\frac{c}{d}+x\right] - \operatorname{Log}\left[\frac{e\,(a+b x)}{c+d x}\right]\right)$$

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

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

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

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

$$12 b^2 c^2 \left(\operatorname{Log}\left[\frac{a}{b}+x\right]^2 \operatorname{Log}\left[\frac{b\,(c+d x)}{b c - a d}\right] + 2 \operatorname{Log}\left[\frac{a}{b}+x\right] \operatorname{PolyLog}\left[2, \frac{d\,(a+b x)}{-b c + a d}\right] - \right.$$

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

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

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

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

$$4 b c \left(a d + 2 b d x - b d x \operatorname{Log}\left[\frac{c}{d}+x\right] - b c \operatorname{Log}[c+d x] + \operatorname{Log}\left[\frac{a}{b}+x\right]\right.$$

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

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

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

Problem 86: Result more than twice size of optimal antiderivative.

$$\int \frac{(a g + b g x) \left(A + B \operatorname{Log}\left[\frac{e\,(a+b x)}{c+d x}\right]\right)^2}{c i + d i x} \, dx$$

Optimal (type 4, 283 leaves, 9 steps):

$$\frac{2\,B\,(b\,c-a\,d)\,g\,\text{Log}\!\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\left(A+B\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{d^2\,i}+\frac{g\,(a+b\,x)\,\left(A+B\,\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{d\,i}+$$

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

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

Result (type 4, 1209 leaves) :

$$\frac{1}{3\,d^2\,i}\,g\,\Bigg(3\,A^2\,b\,d\,x-3\,A^2\,(b\,c-a\,d)\,\text{Log}[c+d\,x]-$$

$$3\,a\,A\,B\,d\,\Bigg(\text{Log}\!\left[\frac{c}{d}+x\right]^2+2\left(\text{Log}\!\left[\frac{a}{b}+x\right]-\text{Log}\!\left[\frac{c}{d}+x\right]-\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)\text{Log}[c+d\,x]-$$

$$2\left(\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\!\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Bigg)-$$

$$3\,A\,B\,\Bigg(-2\,d\,(a+b\,x)\left(-1+\text{Log}\!\left[\frac{a}{b}+x\right]\right)+2\,b\,(c+d\,x)\left(-1+\text{Log}\!\left[\frac{c}{d}+x\right]\right)-b\,c\,\text{Log}\!\left[\frac{c}{d}+x\right]^2+$$

$$2\,b\left(\text{Log}\!\left[\frac{a}{b}+x\right]-\text{Log}\!\left[\frac{c}{d}+x\right]-\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)(d\,x-c\,\text{Log}[c+d\,x])+$$

$$2\,b\,c\left(\text{Log}\!\left[\frac{a}{b}+x\right]\text{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\!\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Bigg)+$$

$$a\,B^2\,d\,\Bigg(\text{Log}\!\left[\frac{c}{d}+x\right]^3+3\,\text{Log}\!\left[\frac{c}{d}+x\right]^2\left(-\text{Log}\!\left[\frac{a}{b}+x\right]+\text{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

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

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

$$3\left(\text{Log}\!\left[\frac{a}{b}+x\right]-\text{Log}\!\left[\frac{c}{d}+x\right]-\text{Log}\!\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)$$

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

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

$$B^2\,\Bigg(3\,d\,(a+b\,x)\left(2-2\,\text{Log}\!\left[\frac{a}{b}+x\right]+\text{Log}\!\left[\frac{a}{b}+x\right]^2\right)-b\,c\,\text{Log}\!\left[\frac{c}{d}+x\right]^3+3\,b\,(c+d\,x)$$

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

$$(d\,x-c\,\text{Log}[c+d\,x])-6\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\!\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}[c+d\,x]+\right.$$

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

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

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

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

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

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

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

Problem 87: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{c\,i+d\,i\,x}\,\mathbb{d}x$$

Optimal (type 4, 127 leaves, 4 steps):

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

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

Result (type 4, 458 leaves):

$$\frac{1}{3\,d\,i}$$

$$\Bigg(3\,A^2\,\text{Log}\,[\,c+d\,x\,] - 3\,A\,B\,\Bigg(\text{Log}\Big[\frac{c}{d}+x\Big]^2 + 2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big] - \text{Log}\Big[\frac{c}{d}+x\Big] - \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)\,\text{Log}\,[\,c+d\,x\,] -$$

$$2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + \text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)\Bigg) +$$

$$B^2\,\Bigg(\text{Log}\Big[\frac{c}{d}+x\Big]^3 + 3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big] + \text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big) +$$

$$3\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big] + \text{Log}\Big[\frac{c}{d}+x\Big] + \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2\,\text{Log}\,[\,c+d\,x\,] +$$

$$3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 6\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$3\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big] - \text{Log}\Big[\frac{c}{d}+x\Big] - \text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)$$

$$\Big(\text{Log}\Big[\frac{c}{d}+x\Big]^2 - 2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + \text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)\Big) + 6\,\text{Log}\Big[\frac{c}{d}+x\Big]$$

$$\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 6\,\text{PolyLog}\Big[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 6\,\text{PolyLog}\Big[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Bigg)\Bigg)$$

Problem 92: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g+b\,g\,x)^3\,\Big(A+B\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\Big)^2}{(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 4, 722 leaves, 18 steps) :

$$\frac{2\,A\,B\,(b\,c - a\,d)^2\,g^3\,(a + b\,x)}{d^3\,i^2\,(c + d\,x)} - \frac{2\,B^2\,(b\,c - a\,d)^2\,g^3\,(a + b\,x)}{d^3\,i^2\,(c + d\,x)} +$$

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

$$\frac{6\,b\,B\,(b\,c - a\,d)^2\,g^3\,\mathrm{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{d^4\,i^2} -$$

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

$$\frac{(b\,c - a\,d)^2\,g^3\,(a + b\,x)\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{d^3\,i^2\,(c + d\,x)} + \frac{b^3\,g^3\,(c + d\,x)^2\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{2\,d^4\,i^2} -$$

$$\frac{3\,b\,(b\,c - a\,d)^2\,g^3\,\mathrm{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A + B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{d^4\,i^2} + \frac{b\,B^2\,(b\,c - a\,d)^2\,g^3\,\mathrm{Log}[c + d\,x]}{d^4\,i^2} +$$

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

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

$$\frac{b\,B^2\,(b\,c - a\,d)^2\,g^3\,\mathrm{PolyLog}\left[2, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{d^4\,i^2} + \frac{6\,b\,B^2\,(b\,c - a\,d)^2\,g^3\,\mathrm{PolyLog}\left[3, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i^2}$$

Result (type 4, 4743 leaves):

$$-\frac{A^2\,b^2\,(2\,b\,c - 3\,a\,d)\,g^3\,x}{d^3\,i^2} + \frac{A^2\,b^3\,g^3\,x^2}{2\,d^2\,i^2} + \frac{A^2\,b^3\,c^3\,g^3 - 3\,a\,A^2\,b^2\,c^2\,d\,g^3 + 3\,a^2\,A^2\,b\,c\,d^2\,g^3 - a^3\,A^2\,d^3\,g^3}{d^4\,i^2\,(c + d\,x)} +$$

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

$$\frac{3\,\left(A^2\,b^3\,c^2\,g^3 - 2\,a\,A^2\,b^2\,c\,d\,g^3 + a^2\,A^2\,b\,d^2\,g^3\right)\,\mathrm{Log}[c + d\,x]}{d^4\,i^2} +$$

$$\frac{1}{i^2}\,2\,a^3\,A\,B\,g^3\left| \frac{\left(\frac{c}{d} + x\right)\,\left(\mathrm{Log}\left[\frac{c}{d} + x\right] + \mathrm{Log}\left[\frac{c}{d} + x\right]^2\right)}{(c + d\,x)^2\,\mathrm{Log}\left[\frac{c}{d} + x\right]} + \right.$$

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

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

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

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

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

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

$$\frac{1}{i^2}6\,a\,A\,b^2\,B\,g^3\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+Log\left[\frac{a}{b}+x\right]\right)}{d^2}-\frac{\left(\frac{c}{d}+x\right)\left(-1+Log\left[\frac{c}{d}+x\right]\right)}{d^2}+\frac{c\,Log\left[\frac{c}{d}+x\right]^2}{d^3}+\right.$$

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

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

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

$$6\,a^2\,A\,b\,B\,g^3\left(-\frac{Log\left[\frac{c}{d}+x\right]^2}{2\,d^2}-\frac{c\left(1+Log\left[\frac{c}{d}+x\right]\right)}{d^2\,(c+d\,x)}-\frac{c\left(-\frac{Log\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,Log[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,Log[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d}+\right.$$

$$\frac{1}{d^2}\left(\frac{c}{c+dx}+\text{Log}[c+dx]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right)+$$

$$\frac{\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b(c+dx)}{bc-ad}\right]+\text{PolyLog}\left[2,\frac{d(a+bx)}{-bc+ad}\right]}{d^2}\Bigg)+$$

$$\frac{1}{i^2}b^3B^2g^3\left|-\frac{2c(a+bx)\left(2-2\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{bd^3}+\frac{1}{4b^2d^2}\right.$$

$$(a+bx)\left(-7a+bx+(6a-2bx)\text{Log}\left[\frac{a}{b}+x\right]-2(a-bx)\text{Log}\left[\frac{a}{b}+x\right]^2\right)+\frac{c^2\text{Log}\left[\frac{c}{d}+x\right]^3}{d^4}-$$

$$\frac{2c(c+dx)\left(2-2\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^4}+\frac{c^3\left(2+2\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^4(c+dx)}+$$

$$\frac{1}{4d^4}(c+dx)\left(-7c+dx+(6c-2dx)\text{Log}\left[\frac{c}{d}+x\right]-2(c-dx)\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

$$\frac{1}{2d^4}\left(-4cdx+d^2x^2+\frac{2c^3}{c+dx}+6c^2\text{Log}[c+dx]\right)$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right)^2-\left(c^3\left(-d(a+bx)\text{Log}\left[\frac{a}{b}+x\right]^2+\right.\right.$$

$$\left.\left.2b(c+dx)\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b(c+dx)}{bc-ad}\right]+2b(c+dx)\text{PolyLog}\left[2,\frac{d(a+bx)}{-bc+ad}\right]\right)\right)\Big/$$

$$\left(d^4(-bc+ad)(c+dx)\right)+2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{ae}{c+dx}+\frac{bex}{c+dx}\right]\right)$$

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

$$\frac{c^3\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^4(c+dx)}+\frac{-\frac{1}{2}b\left(-\frac{ax}{b^2}+\frac{x^2}{2b}+\frac{a^2\text{Log}[a+bx]}{b^3}\right)+\frac{1}{2}x^2\text{Log}\left[\frac{a+bx}{b}\right]}{d^2}-$$

$$\frac{c^3\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d(c+dx)}-\frac{b\text{Log}[a+bx]}{d(-bc+ad)}+\frac{b\text{Log}[c+dx]}{d(-bc+ad)}\right)}{d^3}-\frac{-\frac{1}{2}d\left(-\frac{cx}{d^2}+\frac{x^2}{2d}+\frac{c^2\text{Log}[c+dx]}{d^3}\right)+\frac{1}{2}x^2\text{Log}\left[\frac{c+dx}{d}\right]}{d^2}+$$

$$\left.\frac{3c^2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b(c+dx)}{bc-ad}\right]+\text{PolyLog}\left[2,\frac{d(a+bx)}{-bc+ad}\right]\right)}{d^4}+\frac{1}{d^4}\right|$$

$$3c^2\left(\text{Log}\left[\frac{a}{b}+x\right]^2\text{Log}\left[\frac{b(c+dx)}{bc-ad}\right]+2\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d(a+bx)}{-bc+ad}\right]-\right.$$

$$2 \, \text{PolyLog}\Big[3, \, \frac{d \,(a + b\,x)}{-b\,c + a\,d}\Big]\Big) - 2\Big(-\frac{1}{b\,d^4}$$

$$2\,c\,\Big[a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\Big[\frac{c}{d} + x\Big] - b\,c\,\text{Log}[c + d\,x] + \text{Log}\Big[\frac{a}{b} + x\Big]\,\Big(-d\,(a + b\,x) + d\,(a + b\,x)$$

$$\text{Log}\Big[\frac{c}{d} + x\Big] + (b\,c - a\,d)\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big) + (b\,c - a\,d)\,\text{PolyLog}\Big[2, \, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big) +$$

$$\frac{1}{4\,b^2\,d^4}\,\Big(-2\,a\,b\,c\,d - 3\,b^2\,c\,d\,x - 3\,a\,b\,d^2\,x + b^2\,d^2\,x^2 + 2\,a\,b\,d^2\,x\,\text{Log}\Big[\frac{c}{d} + x\Big] -$$

$$b^2\,d^2\,x^2\,\text{Log}\Big[\frac{c}{d} + x\Big] + a^2\,d^2\,\text{Log}[a + b\,x] + b^2\,c^2\,\text{Log}[c + d\,x] + 2\,a\,b\,c\,d\,\text{Log}[c + d\,x] +$$

$$\text{Log}\Big[\frac{a}{b} + x\Big]\,\Big(b\,d\,(2\,a\,c + b\,x\,(2\,c - d\,x)) - 2\,d^2\,(a^2 - b^2\,x^2)\,\text{Log}\Big[\frac{c}{d} + x\Big] + (-2\,b^2\,c^2 + 2\,a^2\,d^2)$$

$$\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big) + (-2\,b^2\,c^2 + 2\,a^2\,d^2)\,\text{PolyLog}\Big[2, \, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big) -$$

$$\Big(c^3\,\Big[2\,(b\,c - a\,d)\,\text{Log}\Big[\frac{a}{b} + x\Big]\,\Big(1 + \text{Log}\Big[\frac{c}{d} + x\Big]\Big) + b\,(c + d\,x)\,\Big(\text{Log}\Big[\frac{c}{d} + x\Big]^2 -$$

$$2\,\text{Log}[a + b\,x] - 2\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + 2\,\text{Log}[c + d\,x]\Big) -$$

$$2\,b\,(c + d\,x)\,\text{PolyLog}\Big[2, \, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big)\Big]\Big) \Big/ \, \big(2\,d^4\,(-b\,c + a\,d)\,(c + d\,x)\big) +$$

$$\frac{1}{2\,d^4}\,3\,c^2\,\Big(\text{Log}\Big[\frac{c}{d} + x\Big]^2\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big] - \text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big) - 2\,\text{Log}\Big[\frac{c}{d} + x\Big]$$

$$\text{PolyLog}\Big[2, \, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] + 2\,\text{PolyLog}\Big[3, \, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big)\Big)\Big) +$$

$$\frac{1}{i^2}\,3\,a\,b^2\,B^2\,g^3\,\Bigg(\frac{(a + b\,x)\,\Big(2 - 2\,\text{Log}\big[\frac{a}{b} + x\big] + \text{Log}\big[\frac{a}{b} + x\big]^2\Big)}{b\,d^2} - \frac{2\,c\,\text{Log}\big[\frac{c}{d} + x\big]^3}{3\,d^3} +$$

$$\frac{(c + d\,x)\,\Big(2 - 2\,\text{Log}\big[\frac{c}{d} + x\big] + \text{Log}\big[\frac{c}{d} + x\big]^2\Big)}{d^3} - \frac{c^2\,\Big(2 + 2\,\text{Log}\big[\frac{c}{d} + x\big] + \text{Log}\big[\frac{c}{d} + x\big]^2\Big)}{d^3\,(c + d\,x)} + \frac{1}{d^3}$$

$$\Big(d\,x - \frac{c^2}{c + d\,x} - 2\,c\,\text{Log}[c + d\,x]\Big)\,\Big(-\text{Log}\Big[\frac{a}{b} + x\Big] + \text{Log}\Big[\frac{c}{d} + x\Big] + \text{Log}\Big[\frac{a\,e}{c + d\,x} + \frac{b\,e\,x}{c + d\,x}\Big]\Big)^2 +$$

$$\Big(c^2\,\Big(-d\,(a + b\,x)\,\text{Log}\Big[\frac{a}{b} + x\Big]^2 + 2\,b\,(c + d\,x)\,\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] +$$

$$2\,b\,(c + d\,x)\,\text{PolyLog}\Big[2, \, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big)\Big) \Big/$$

$$\big(d^3\,(-b\,c + a\,d)\,(c + d\,x)\big) + 2\,\Big(-\text{Log}\Big[\frac{a}{b} + x\Big] + \text{Log}\Big[\frac{c}{d} + x\Big] + \text{Log}\Big[\frac{a\,e}{c + d\,x} + \frac{b\,e\,x}{c + d\,x}\Big]\Big)$$

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

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

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

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

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

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

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

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

$$2\,\text{Log}[c+d\,x]\bigg) - 2\,b\,(c+d\,x)\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\bigg)\bigg) \bigg/ $$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 93: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 4, 469 leaves, 12 steps):

$$-\frac{2\,A\,B\,(b\,c-a\,d)\,g^2\,(a+b\,x)}{d^2\,i^2\,(c+d\,x)} + \frac{2\,B^2\,(b\,c-a\,d)\,g^2\,(a+b\,x)}{d^2\,i^2\,(c+d\,x)} -$$

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

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

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

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

$$\frac{4\,b\,B^2\,(b\,c-a\,d)\,g^2\,PolyLog\left[3,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^3\,i^2}$$

Result (type 4, 2704 leaves):

$$\frac{A^2\,b^2\,g^2\,x}{d^2\,i^2} + \frac{-A^2\,b^2\,c^2\,g^2 + 2\,a\,A^2\,b\,c\,d\,g^2 - a^2\,A^2\,d^2\,g^2}{d^3\,i^2\,(c+d\,x)} +$$

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

$$\frac{2\,\left(-A^2\,b^2\,c\,g^2 + a\,A^2\,b\,d\,g^2\right)\,Log[c+d\,x]}{d^3\,i^2} + \frac{1}{i^2}2\,a^2\,A\,B\,g^2\left|\frac{\left(\frac{c}{d}+x\right)\,\left(Log\left[\frac{c}{d}+x\right] + Log\left[\frac{c}{d}+x\right]^2\right)}{(c+d\,x)^2\,Log\left[\frac{c}{d}+x\right]} + \right.$$

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

$$\frac{1}{i^2}2\,A\,b^2\,B\,g^2\left|\frac{\left(\frac{a}{b}+x\right)\,\left(-1+Log\left[\frac{a}{b}+x\right]\right)}{d^2} - \frac{\left(\frac{c}{d}+x\right)\,\left(-1+Log\left[\frac{c}{d}+x\right]\right)}{d^2} + \frac{c\,Log\left[\frac{c}{d}+x\right]^2}{d^3} + \right.$$

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

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

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

$$4\,a\,A\,b\,B\,g^2\left(-\frac{\text{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^2}-\frac{c\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2\left(c+d\,x\right)}-\frac{c\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d}+\right.$$

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

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

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

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

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

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

$$\left.\left.\left.2\,b\,(c+d\,x)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right/$$

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

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

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

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

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

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

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

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

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

$$2\,\text{Log}[c+d\,x]\Big)-2\,b\,(c+d\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Big)\Big)\Big/$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 94: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)\left(A + B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{(c\,i + d\,i\,x)^2}\,dx$$

Optimal (type 4, 261 leaves, 9 steps):

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

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

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

Result (type 4, 1145 leaves):

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

$$\frac{A^2\,b\,\text{Log}[c+d\,x]}{d^2} - \Bigg(2\,a\,A\,B\Bigg(b\,c - a\,d + b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right] +$$

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

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

$$2\left(-\frac{c}{c+d\,x}+\frac{b\,c\,\mathrm{Log}[a+b\,x]}{-b\,c+a\,d}+\frac{b\,c\,\mathrm{Log}[c+d\,x]}{b\,c-a\,d}-\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{Log}[c+d\,x]+\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 100: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(a\,g+b\,g\,x\right)^3\left(A+B\,\mathrm{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{\left(c\,i+d\,i\,x\right)^3}\,dx$$

Optimal (type 4, 635 leaves, 14 steps):

$$\frac{B^2\,(b\,c-a\,d)\,g^3\,(a+b\,x)^2}{4\,d^2\,i^3\,(c+d\,x)^2}-\frac{4\,A\,b\,B\,(b\,c-a\,d)\,g^3\,(a+b\,x)}{d^3\,i^3\,(c+d\,x)}+\frac{4\,b\,B^2\,(b\,c-a\,d)\,g^3\,(a+b\,x)}{d^3\,i^3\,(c+d\,x)}-$$

$$\frac{4\,b\,B^2\,(b\,c-a\,d)\,g^3\,(a+b\,x)\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{d^3\,i^3\,(c+d\,x)}-\frac{B\,(b\,c-a\,d)\,g^3\,(a+b\,x)^2\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{2\,d^2\,i^3\,(c+d\,x)^2}+$$

$$\frac{2\,b^2\,B\,(b\,c-a\,d)\,g^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{d^4\,i^3}+\frac{b^2\,g^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{d^3\,i^3}+$$

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

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

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

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

Result (type 4, 5648 leaves):

$$\frac{A^2\,b^3\,g^3\,x}{d^3\,i^3}-\frac{A^2\,\left(-b^3\,c^3+3\,a\,b^2\,c^2\,d-3\,a^2\,b\,c\,d^2+a^3\,d^3\right)\,g^3}{2\,d^4\,i^3\,(c+d\,x)^2}-$$

$$\frac{3\,\left(A^2\,b^3\,c^2\,g^3-2\,a\,A^2\,b^2\,c\,d\,g^3+a^2\,A^2\,b\,d^2\,g^3\right)}{d^4\,i^3\,(c+d\,x)}+\frac{3\,\left(-A^2\,b^3\,c\,g^3+a\,A^2\,b^2\,d\,g^3\right)\,\text{Log}[c+d\,x]}{d^4\,i^3}+$$

$$\left(a^3\,B^2\,g^3\,\left(-7\,b^2\,c^2+8\,a\,b\,c\,d-a^2\,d^2-6\,b^2\,c\,d\,x+6\,a\,b\,d^2\,x-6\,b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x]+\right.\right.$$

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

$$\left.\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+6\,b^2\,c^2\,\text{Log}[c+d\,x]+12\,b^2\,c\,d\,x\,\text{Log}[c+d\,x]+6\,b^2\,d^2\,x^2\,\text{Log}[c+d\,x]\right)\right)\Big/$$

$$\left(4\,d\,(b\,c-a\,d)^2\,i^3\,(c+d\,x)^2\right)+\frac{1}{i^3}2\,a^3\,A\,B\,g^3\,\left(\frac{\left(\frac{c}{d}+x\right)\,\left(2\,\text{Log}\left[\frac{c}{d}+x\right]+4\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{8\,(c+d\,x)^3\,\text{Log}\left[\frac{c}{d}+x\right]}+\frac{1}{2\,d}\right.$$

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

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

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

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

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

$$\frac{1}{i^3}\,2\,A\,b^3\,B\,g^3\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{d^3} - \frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3} + \frac{3\,c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^4} + \right.$$

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

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

$$\left(-2\,d\,x + \frac{c^2\,(5\,c+6\,d\,x)}{(c+d\,x)^2} + 6\,c\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\frac{c^3\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^4\,(c+d\,x)^2}-\frac{1}{2\,d^4}\left(-2\,d\,x+\frac{c^2\,(5\,c+6\,d\,x)}{(c+d\,x)^2}+6\,c\,\text{Log}[c+d\,x]\right)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x] + b^2\,(c+d\,x)^2\,\text{Log}[c+d\,x] +$$

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

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

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

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

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

$$\frac{c^2\,\left(1 + 2\,\text{Log}\left[\frac{c}{d}+x\right] + 2\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^3\,(c+d\,x)^2} + \frac{1}{2\,d^3}$$

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

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

$$\left.\left.2\,b\,(c+d\,x)\,\text{PolyLog}\!\left[2,\tfrac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Big/\left(d^3\,(-b\,c+a\,d)\,(c+d\,x)\right)-$$

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

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

$$\left.\left.2\,b^2\,(c+d\,x)^2\,\text{PolyLog}\!\left[2,\tfrac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Big/$$

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

$$\left(-\frac{\text{Log}\!\left[\tfrac{c}{d}+x\right]^2}{2\,d^3}-\frac{2\,c\left(1+\text{Log}\!\left[\tfrac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)}+\frac{c^2\left(1+2\,\text{Log}\!\left[\tfrac{c}{d}+x\right]\right)}{4\,d^3\,(c+d\,x)^2}-\right.$$

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

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

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

$$\left.2\,\text{Log}\!\left[\tfrac{a}{b}+x\right]\,\text{PolyLog}\!\left[2,\tfrac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-2\,\text{PolyLog}\!\left[3,\tfrac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-$$

$$2\left(-\left(\left(c\left(2\,(b\,c-a\,d)\,\text{Log}\!\left[\tfrac{a}{b}+x\right]\left(1+\text{Log}\!\left[\tfrac{c}{d}+x\right]\right)+b\,(c+d\,x)\right.\right.\right.\right.$$

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

$$\left.\left.b\,(c+d\,x)\,\text{PolyLog}\!\left[2,\tfrac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left(d^3\,(-b\,c+a\,d)\,(c+d\,x)\right)-$$

$$\left(c^2\left(-b\,(b\,c-a\,d)\,(c+d\,x)+(b\,c-a\,d)^2\,\text{Log}\!\left[\tfrac{a}{b}+x\right]\left(1+2\,\text{Log}\!\left[\tfrac{c}{d}+x\right]\right)-\right.\right.$$

$$b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x]+b^2\,(c+d\,x)^2\,\text{Log}[c+d\,x]+$$

$$b\,(c+d\,x)\left(b\,(c+d\,x)\,\text{Log}\!\left[\tfrac{c}{d}+x\right]^2-2\,(b\,c-a\,d)\left(1+\text{Log}\!\left[\tfrac{c}{d}+x\right]\right)\right)-$$

$$2\,b\,(c+d\,x)\,\left(\mathrm{Log}\Big[\tfrac{c}{d}+x\Big]\,\mathrm{Log}\Big[\tfrac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+\mathrm{PolyLog}\Big[2,\tfrac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\right)\Bigg)\Bigg)\Bigg)\Bigg/$$

$$\left(4\,d^3\,(b\,c-a\,d)^2\,(c+d\,x)^2\right)+\frac{1}{2\,d^3}\left(\mathrm{Log}\Big[\tfrac{c}{d}+x\Big]^2\left(\mathrm{Log}\Big[\tfrac{a}{b}+x\Big]-\mathrm{Log}\Big[\tfrac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\right)-\right.$$

$$\left.2\,\mathrm{Log}\Big[\tfrac{c}{d}+x\Big]\,\mathrm{PolyLog}\Big[2,\tfrac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+2\,\mathrm{PolyLog}\Big[3,\tfrac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\right)\Bigg)\Bigg)$$

Problem 101: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)^2\,\left(A+B\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]\right)^2}{(c\,i+d\,i\,x)^3}\,dx$$

Optimal (type 4, 410 leaves, 11 steps):

$$-\frac{B^2\,g^2\,(a+b\,x)^2}{4\,d\,i^3\,(c+d\,x)^2}+\frac{2\,A\,b\,B\,g^2\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)}-\frac{2\,b\,B^2\,g^2\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)}+\frac{2\,b\,B^2\,g^2\,(a+b\,x)\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]}{d^2\,i^3\,(c+d\,x)}+$$

$$\frac{B\,g^2\,(a+b\,x)^2\,\left(A+B\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]\right)}{2\,d\,i^3\,(c+d\,x)^2}-\frac{g^2\,(a+b\,x)^2\,\left(A+B\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]\right)^2}{2\,d\,i^3\,(c+d\,x)^2}-$$

$$\frac{b\,g^2\,(a+b\,x)\,\left(A+B\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]\right)^2}{d^2\,i^3\,(c+d\,x)}-\frac{b^2\,g^2\,\mathrm{Log}\Big[\tfrac{b\,c-a\,d}{b\,(c+d\,x)}\Big]\,\left(A+B\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]\right)^2}{d^3\,i^3}-$$

$$\frac{2\,b^2\,B\,g^2\,\left(A+B\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]\right)\,\mathrm{PolyLog}\Big[2,\tfrac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^3\,i^3}+\frac{2\,b^2\,B^2\,g^2\,\mathrm{PolyLog}\Big[3,\tfrac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^3\,i^3}$$

Result (type 4, 3591 leaves):

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

$$\left(a^2\,B^2\,g^2\,\left(-7\,b^2\,c^2+8\,a\,b\,c\,d-a^2\,d^2-6\,b^2\,c\,d\,x+6\,a\,b\,d^2\,x-6\,b^2\,(c+d\,x)^2\,\mathrm{Log}[a+b\,x]+\right.\right.$$

$$2\,(b\,c-a\,d)\,(3\,b\,c-a\,d+2\,b\,d\,x)\,\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]-2\,d\,(a+b\,x)\,(-2\,b\,c+a\,d-b\,d\,x)$$

$$\left.\mathrm{Log}\Big[\tfrac{e\,(a+b\,x)}{c+d\,x}\Big]^2+6\,b^2\,c^2\,\mathrm{Log}[c+d\,x]+12\,b^2\,c\,d\,x\,\mathrm{Log}[c+d\,x]+6\,b^2\,d^2\,x^2\,\mathrm{Log}[c+d\,x]\right)\right)\Bigg/$$

$$\left(4\,d\,(b\,c-a\,d)^2\,i^3\,(c+d\,x)^2\right)+\frac{1}{i^3}2\,a^2\,A\,B\,g^2\left(\frac{\left(\tfrac{c}{d}+x\right)\,\left(2\,\mathrm{Log}\Big[\tfrac{c}{d}+x\Big]+4\,\mathrm{Log}\Big[\tfrac{c}{d}+x\Big]^2\right)}{8\,(c+d\,x)^3\,\mathrm{Log}\Big[\tfrac{c}{d}+x\Big]}+\frac{1}{2\,d}\right.$$

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

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

$$4\,a\,A\,b\,B\,g^2\left(\frac{1+\mathrm{Log}\left[\frac{c}{d}+x\right]}{d^2\,(c+d\,x)}-\frac{c\left(1+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{4\,d^2\,(c+d\,x)^2}+\frac{-\frac{\mathrm{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\mathrm{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\mathrm{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}}{d}-\right.$$

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

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

$$2\,A\,b^2\,B\,g^2\left(-\frac{\mathrm{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^3}-\frac{2\,c\left(1+\mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)}+\frac{c^2\left(1+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{4\,d^3\,(c+d\,x)^2}-\right.$$

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

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

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

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

$$\frac{1}{i^3}\,2\,a\,b\,B^2\,g^2\left(-\frac{2+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]^2}{d^2\,(c+d\,x)}+\frac{c\left(1+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^2\,(c+d\,x)^2}+\right.$$

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

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

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

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

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

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

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

$$2\ b\ (c+d\ x)\ \text{Log}\left[\frac{a}{b}+x\right]\ \left(d\ (a+b\ x)+b\ (c+d\ x)\ \text{Log}\left[\frac{b\ (c+d\ x)}{b\ c-a\ d}\right]\right)+$$

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

$$2\left(\left(2\ (b\ c-a\ d)\ \text{Log}\left[\frac{a}{b}+x\right]\ \left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)+b\ (c+d\ x)\right.\right.$$

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

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

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

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

$$2\ (b\ c-a\ d)\ \left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)-2\ b\ (c+d\ x)\ \left(\text{Log}\left[\frac{c}{d}+x\right]\ \text{Log}\left[\frac{d\ (a+b\ x)}{-b\ c+a\ d}\right]+\right.$$

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

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

$$\frac{c^2\,\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^3\,(c+d\,x)^2} + \frac{1}{2\,d^3}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x] + b^2\,(c+d\,x)^2\,\text{Log}[c+d\,x] +$$

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

$$2\,b\,(c+d\,x)\,\left(\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right) \bigg/$$

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

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

Problem 113: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(a\,g + b\,g\,x)^2}\,dx$$

Optimal (type 4, 150 leaves, 5 steps):

$$-\frac{B\,i\,n\,(c+d\,x)}{b\,g^2\,(a+b\,x)} - \frac{i\,(c+d\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b\,g^2\,(a+b\,x)} -$$

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

Result (type 4, 403 leaves):

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

$$2\,d\,\text{Log}[a+b\,x]\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\left(2\,b\,B\,c\,n\right.$$

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

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

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

$$\left(2\,a\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\Bigg/$$

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

Problem 114: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{\left(a\,g+b\,g\,x\right)^{3}}\,dx$$

Optimal (type 3, 89 leaves, 2 steps):

$$-\frac{B\,i\,n\,(c+d\,x)^{2}}{4\,(b\,c-a\,d)\,g^{3}\,(a+b\,x)^{2}}-\frac{i\,(c+d\,x)^{2}\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{2\,(b\,c-a\,d)\,g^{3}\,(a+b\,x)^{2}}$$

Result (type 3, 216 leaves):

$$\left(i\,\left(-2\,A\,b^{2}\,c^{2}+2\,a^{2}\,A\,d^{2}-b^{2}\,B\,c^{2}\,n+a^{2}\,B\,d^{2}\,n-4\,A\,b^{2}\,c\,d\,x+\right.\right.$$

$$4\,a\,A\,b\,d^{2}\,x-2\,b^{2}\,B\,c\,d\,n\,x+2\,a\,b\,B\,d^{2}\,n\,x-2\,B\,d^{2}\,n\,(a+b\,x)^{2}\,\text{Log}[a+b\,x]-$$

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

$$\left.\left.4\,a\,b\,B\,d^{2}\,n\,x\,\text{Log}[c+d\,x]+2\,b^{2}\,B\,d^{2}\,n\,x^{2}\,\text{Log}[c+d\,x]\right)\right)\Bigg/\left(4\,b^{2}\,(b\,c-a\,d)\,g^{3}\,(a+b\,x)^{2}\right)$$

Problem 121: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)^{2}\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{a\,g+b\,g\,x}\,dx$$

Optimal (type 4, 289 leaves, 10 steps):

$$-\frac{B\,d\,(b\,c-a\,d)\,i^2\,n\,x}{2\,b^2\,g} + \frac{d\,(b\,c-a\,d)\,i^2\,(a+b\,x)\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^3\,g} +$$

$$\frac{i^2\,(c+d\,x)^2\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,b\,g} - \frac{B\,(b\,c-a\,d)^2\,i^2\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{2\,b^3\,g} -$$

$$\frac{3\,B\,(b\,c-a\,d)^2\,i^2\,n\,\mathrm{Log}[c+d\,x]}{2\,b^3\,g} - \frac{(b\,c-a\,d)^2\,i^2\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\mathrm{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g} +$$

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

Result (type 4, 651 leaves):

$$\frac{1}{2\,b^3\,g}$$

$$i^2\left(4\,b^2\,B\,c^2\,n-6\,a\,b\,B\,c\,d\,n+2\,a^2\,B\,d^2\,n+4\,A\,b^2\,c\,d\,x-2\,a\,A\,b\,d^2\,x-b^2\,B\,c\,d\,n\,x+a\,b\,B\,d^2\,n\,x+A\,b^2\,d^2\,x^2+\right.$$

$$B\,(b\,c-a\,d)^2\,n\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2-4\,b^2\,B\,c^2\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]+2\,a\,b\,B\,c\,d\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]+$$

$$2\,A\,b^2\,c^2\,\mathrm{Log}[a+b\,x]-4\,a\,A\,b\,c\,d\,\mathrm{Log}[a+b\,x]+2\,a^2\,A\,d^2\,\mathrm{Log}[a+b\,x]-$$

$$a^2\,B\,d^2\,n\,\mathrm{Log}[a+b\,x]+2\,b^2\,B\,c^2\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}[a+b\,x]-$$

$$4\,a\,b\,B\,c\,d\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}[a+b\,x]+2\,a^2\,B\,d^2\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}[a+b\,x]-$$

$$2\,B\,n\,\mathrm{Log}\left[\frac{a}{b}+x\right]\left(a\,d\,(-2\,b\,c+a\,d)+(b\,c-a\,d)^2\,\mathrm{Log}[a+b\,x]\right)-$$

$$2\,b^2\,B\,c^2\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+4\,a\,b\,B\,c\,d\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$

$$2\,a^2\,B\,d^2\,n\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+4\,b^2\,B\,c\,d\,x\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-2\,a\,b\,B\,d^2\,x$$

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

$$4\,a\,b\,B\,c\,d\,\mathrm{Log}[a+b\,x]\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+2\,a^2\,B\,d^2\,\mathrm{Log}[a+b\,x]\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$

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

Problem 122: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^2\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(a\,g+b\,g\,x)^2}\,dx$$

Optimal (type 4, 259 leaves, 8 steps):

$$-\frac{B\,(b\,c-a\,d)\,i^2\,n\,(c+d\,x)}{b^2\,g^2\,(a+b\,x)}+\frac{d^2\,i^2\,(a+b\,x)\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^3\,g^2}-$$

$$\frac{(b\,c-a\,d)\,i^2\,(c+d\,x)\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^2\,g^2\,(a+b\,x)}-\frac{B\,d\,(b\,c-a\,d)\,i^2\,n\,Log[c+d\,x]}{b^3\,g^2}-$$

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

Result (type 4, 712 leaves):

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

$$\frac{(b\,c-a\,d)^2\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{a+b\,x}+$$

$$2\,d\,(b\,c-a\,d)\,Log[a+b\,x]\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\left(b^2\,B\,c^2\,n\right.$$

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

$$\left((b\,c-a\,d)\,(a+b\,x)\right)+b\,B\,c\,d\,n\,\left(Log\left[\frac{a}{b}+x\right]^2+\frac{2\,a\,\left(1+Log\left[\frac{a}{b}+x\right]\right)}{a+b\,x}+\right.$$

$$2\,\left(\frac{a}{a+b\,x}+Log[a+b\,x]\right)\,\left(-Log\left[\frac{a}{b}+x\right]+Log\left[\frac{c}{d}+x\right]+Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$\left(2\,a\,\left(\left(-b\,c+a\,d\right)\,Log\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,\left(Log[a+b\,x]-Log[c+d\,x]\right)\right)\right)\Big/$$

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

$$B\,d^2\,n\,\left(-(a+b\,x)\,\left(-1+Log\left[\frac{a}{b}+x\right]\right)+a\,Log\left[\frac{a}{b}+x\right]^2+\frac{a^2\,\left(1+Log\left[\frac{a}{b}+x\right]\right)}{a+b\,x}+\right.$$

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

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

$$\left(a^2\,\left(\left(-b\,c+a\,d\right)\,Log\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,\left(Log[a+b\,x]-Log[c+d\,x]\right)\right)\right)\Big/$$

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

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

$$\int \frac{(c\,i + d\,i\,x)^2 \left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(a\,g + b\,g\,x)^3}\,dx$$

Optimal (type 4, 242 leaves, 7 steps):

$$-\frac{B\,d\,i^2\,n\,(c+d\,x)}{b^2\,g^3\,(a+b\,x)} - \frac{B\,i^2\,n\,(c+d\,x)^2}{4\,b\,g^3\,(a+b\,x)^2} -$$

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

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

Result (type 4, 903 leaves):

$$\frac{1}{4\,b^3\,g^3}$$

$$i^2 \left(-\left(\left(b^2\,B\,c^2\,n \left(b^2\,c^2 - 4\,a\,b\,c\,d + a^2\,d^2 - 2\,b^2\,c\,d\,x - 2\,a\,b\,d^2\,x - 2\,b^2\,d^2\,x^2 + 2\,d^2\,(a+b\,x)^2\,\text{Log}\!\left[\frac{c}{d}+x\right] - \right.\right.\right.$$

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

$$4\,a\,b\,c\,d\,\text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right] + 2\,a^2\,d^2\,\text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]\right) \Big/ \left((b\,c-a\,d)^2\,(a+b\,x)^2\right)\right) -$$

$$\frac{2\,(b\,c-a\,d)^2\,\left(A+B\,\text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{(a+b\,x)^2} +$$

$$\frac{8\,d\,(-b\,c+a\,d)\,\left(A+B\,\text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{a+b\,x} +$$

$$4\,d^2\,\text{Log}[a+b\,x]\,\left(A+B\,\text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]\right) -$$

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

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

$$4\,a^2\,b\,c\,d\,\text{Log}[c+d\,x] + 2\,a^3\,d^2\,\text{Log}[c+d\,x] - 8\,a\,b^2\,c\,d\,x\,\text{Log}[c+d\,x] +$$

$$\left.4\,a^2\,b\,d^2\,x\,\text{Log}[c+d\,x] - 4\,b^3\,c\,d\,x^2\,\text{Log}[c+d\,x] + 2\,a\,b^2\,d^2\,x^2\,\text{Log}[c+d\,x]\right) +$$

$$B\,d^2\,n\left(2\,\text{Log}\!\left[\frac{a}{b}+x\right]^2 + \frac{8\,a\left(1+\text{Log}\!\left[\frac{a}{b}+x\right]\right)}{a+b\,x} - \frac{a^2\left(1+2\,\text{Log}\!\left[\frac{a}{b}+x\right]\right)}{(a+b\,x)^2} + \right.$$

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

$$\left(8\,a\left((-b\,c+a\,d)\,\text{Log}\!\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,(\text{Log}[a+b\,x] - \text{Log}[c+d\,x])\right)\right) \Big/$$

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

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

$$\left.\left.\left.4\left(\text{Log}\!\left[\frac{c}{d}+x\right]\,\text{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\!\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)\right)$$

Problem 124: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^2\left(A+B\,\text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(a\,g+b\,g\,x)^4}\,dx$$

Optimal (type 3, 93 leaves, 2 steps):

$$-\frac{B i^2 n \left(c + d x\right)^3}{9 \left(b c - a d\right) g^4 \left(a + b x\right)^3} - \frac{i^2 \left(c + d x\right)^3 \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{3 \left(b c - a d\right) g^4 \left(a + b x\right)^3}$$

Result (type 3, 329 leaves):

$$\frac{1}{9 b^3 \left(b c - a d\right) g^4 \left(a + b x\right)^3}$$

$$i^2 \left(-3 A b^3 c^3 + 3 a^3 A d^3 - b^3 B c^3 n + a^3 B d^3 n - 9 A b^3 c^2 d x + 9 a^2 A b d^3 x - 3 b^3 B c^2 d n x + 3 a^2 b B d^3 n x - \right.$$

$$9 A b^3 c d^2 x^2 + 9 a A b^2 d^3 x^2 - 3 b^3 B c d^2 n x^2 + 3 a b^2 B d^3 n x^2 - 3 B d^3 n \left(a + b x\right)^3 \text{Log}[a + b x] -$$

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

$$\left. \text{Log}[c + d x] + 9 a^2 b B d^3 n x \, \text{Log}[c + d x] + 9 a b^2 B d^3 n x^2 \, \text{Log}[c + d x] + 3 b^3 B d^3 n x^3 \, \text{Log}[c + d x]\right)$$

Problem 131: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(c i + d i x\right)^3 \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{a g + b g x} \, dx$$

Optimal (type 4, 373 leaves, 14 steps):

$$-\frac{5 B d \left(b c - a d\right)^2 i^3 n x}{6 b^3 g} - \frac{B \left(b c - a d\right) i^3 n \left(c + d x\right)^2}{6 b^2 g} +$$

$$\frac{d \left(b c - a d\right)^2 i^3 \left(a + b x\right) \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{b^4 g} +$$

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

$$\frac{5 B \left(b c - a d\right)^3 i^3 n \, \text{Log}\left[\frac{a+b x}{c+d x}\right]}{6 b^4 g} - \frac{11 B \left(b c - a d\right)^3 i^3 n \, \text{Log}[c + d x]}{6 b^4 g} -$$

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

Result (type 4, 1061 leaves):

$$\frac{1}{6\,b^4\,g}\,i^3\,\Big(18\,b^3\,B\,c^3\,n - 36\,a\,b^2\,B\,c^2\,d\,n + 24\,a^2\,b\,B\,c\,d^2\,n - 6\,a^3\,B\,d^3\,n + 18\,A\,b^3\,c^2\,d\,x -$$

$$18\,a\,A\,b^2\,c\,d^2\,x + 6\,a^2\,A\,b\,d^3\,x - 7\,b^3\,B\,c^2\,d\,n\,x + 12\,a\,b^2\,B\,c\,d^2\,n\,x - 5\,a^2\,b\,B\,d^3\,n\,x + 9\,A\,b^3\,c\,d^2\,x^2 -$$

$$3\,a\,A\,b^2\,d^3\,x^2 - b^3\,B\,c\,d^2\,n\,x^2 + a\,b^2\,B\,d^3\,n\,x^2 + 2\,A\,b^3\,d^3\,x^3 + 3\,B\,(b\,c - a\,d)^3\,n\,\text{Log}\Big[\frac{a}{b} + x\Big]^2 -$$

$$18\,b^3\,B\,c^3\,n\,\text{Log}\Big[\frac{c}{d} + x\Big] + 18\,a\,b^2\,B\,c^2\,d\,n\,\text{Log}\Big[\frac{c}{d} + x\Big] - 6\,a^2\,b\,B\,c\,d^2\,n\,\text{Log}\Big[\frac{c}{d} + x\Big] +$$

$$6\,A\,b^3\,c^3\,\text{Log}[a + b\,x] - 18\,a\,A\,b^2\,c^2\,d\,\text{Log}[a + b\,x] + 18\,a^2\,A\,b\,c\,d^2\,\text{Log}[a + b\,x] -$$

$$6\,a^3\,A\,d^3\,\text{Log}[a + b\,x] - 9\,a^2\,b\,B\,c\,d^2\,n\,\text{Log}[a + b\,x] + 5\,a^3\,B\,d^3\,n\,\text{Log}[a + b\,x] +$$

$$6\,b^3\,B\,c^3\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}[a + b\,x] - 18\,a\,b^2\,B\,c^2\,d\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}[a + b\,x] +$$

$$18\,a^2\,b\,B\,c\,d^2\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}[a + b\,x] - 6\,a^3\,B\,d^3\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}[a + b\,x] +$$

$$6\,B\,n\,\text{Log}\Big[\frac{a}{b} + x\Big]\,\Big(a\,d\,(3\,b^2\,c^2 - 3\,a\,b\,c\,d + a^2\,d^2) - (b\,c - a\,d)^3\,\text{Log}[a + b\,x]\Big) -$$

$$6\,b^3\,B\,c^3\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + 18\,a\,b^2\,B\,c^2\,d\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] -$$

$$18\,a^2\,b\,B\,c\,d^2\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + 6\,a^3\,B\,d^3\,n\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] +$$

$$18\,b^3\,B\,c^2\,d\,x\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] - 18\,a\,b^2\,B\,c\,d^2\,x\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] +$$

$$6\,a^2\,b\,B\,d^3\,x\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 9\,b^3\,B\,c\,d^2\,x^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] - 3\,a\,b^2\,B\,d^3\,x^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] +$$

$$2\,b^3\,B\,d^3\,x^3\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 6\,b^3\,B\,c^3\,\text{Log}[a + b\,x]\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] -$$

$$18\,a\,b^2\,B\,c^2\,d\,\text{Log}[a + b\,x]\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 18\,a^2\,b\,B\,c\,d^2\,\text{Log}[a + b\,x]\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] -$$

$$6\,a^3\,B\,d^3\,\text{Log}[a + b\,x]\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 7\,b^3\,B\,c^3\,n\,\text{Log}[c + d\,x] -$$

$$3\,a\,b^2\,B\,c^2\,d\,n\,\text{Log}[c + d\,x] - 6\,B\,(b\,c - a\,d)^3\,n\,\text{PolyLog}\Big[2,\,\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\Big)$$

Problem 132: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3\,\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{(a\,g + b\,g\,x)^2}\,dx$$

Optimal (type 4, 390 leaves, 11 steps) :

$$-\frac{B\, d^2\, \left(b\, c - a\, d\right)\, i^3\, n\, x}{2\, b^3\, g^2} - \frac{B\, \left(b\, c - a\, d\right)^2\, i^3\, n\, \left(c + d\, x\right)}{b^3\, g^2\, \left(a + b\, x\right)} +$$

$$\frac{2\, d^2\, \left(b\, c - a\, d\right)\, i^3\, \left(a + b\, x\right)\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\, x}{c+d\, x}\right)^n\right]\right)}{b^4\, g^2} - \frac{\left(b\, c - a\, d\right)^2\, i^3\, \left(c + d\, x\right)\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\, x}{c+d\, x}\right)^n\right]\right)}{b^3\, g^2\, \left(a + b\, x\right)} +$$

$$\frac{d\, i^3\, \left(c + d\, x\right)^2\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\, x}{c+d\, x}\right)^n\right]\right)}{2\, b^2\, g^2} - \frac{B\, d\, \left(b\, c - a\, d\right)^2\, i^3\, n\, \text{Log}\left[\frac{a+b\, x}{c+d\, x}\right]}{2\, b^4\, g^2} -$$

$$\frac{5\, B\, d\, \left(b\, c - a\, d\right)^2\, i^3\, n\, \text{Log}\left[c + d\, x\right]}{2\, b^4\, g^2} - \frac{3\, d\, \left(b\, c - a\, d\right)^2\, i^3\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\, x}{c+d\, x}\right)^n\right]\right)\, \text{Log}\left[1 - \frac{b\, (c+d\, x)}{d\, (a+b\, x)}\right]}{b^4\, g^2} +$$

$$\frac{3\, B\, d\, \left(b\, c - a\, d\right)^2\, i^3\, n\, \text{PolyLog}\left[2,\, \frac{b\, (c+d\, x)}{d\, (a+b\, x)}\right]}{b^4\, g^2}$$

Result (type 4, 1120 leaves) :

$$\frac{1}{2\,b^4\,g^2}\,i^3\,\left(2\,b\,d^2\,(3\,b\,c-2\,a\,d)\,x\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)+\right.$$

$$b^2\,d^3\,x^2\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$\frac{2\,(b\,c-a\,d)^3\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{a+b\,x}+$$

$$6\,d\,(b\,c-a\,d)^2\,Log[a+b\,x]\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\left(2\,b^3\,B\,c^3\,n\right.$$

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

$$((b\,c-a\,d)\,(a+b\,x))+B\,d^3\,n\,\left(4\,a^2-\frac{4\,a\,b\,c}{d}+a\,b\,x-\frac{b^2\,c\,x}{d}+\frac{2\,a^3}{a+b\,x}+3\,a^2\,Log\left[\frac{a}{b}+x\right]^2+\right.$$

$$\frac{4\,a\,b\,c\,Log\left[\frac{c}{d}+x\right]}{d}-a^2\,Log[a+b\,x]+\frac{2\,a^3\,d\,Log[a+b\,x]}{b\,c-a\,d}+6\,a^2\,Log\left[\frac{c}{d}+x\right]\,Log[a+b\,x]-$$

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

$$b^2\,x^2\,Log\left[\frac{a+b\,x}{c+d\,x}\right]+\frac{2\,a^3\,Log\left[\frac{a+b\,x}{c+d\,x}\right]}{a+b\,x}+6\,a^2\,Log[a+b\,x]\,Log\left[\frac{a+b\,x}{c+d\,x}\right]+\frac{b^2\,c^2\,Log[c+d\,x]}{d^2}+$$

$$\frac{2\,a^3\,d\,Log[c+d\,x]}{-b\,c+a\,d}-6\,a^2\,PolyLog\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+3\,b^2\,B\,c^2\,d\,n\,\left(Log\left[\frac{a}{b}+x\right]^2+\right.$$

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

$$\left(2\,a\,\left((-b\,c+a\,d)\,Log\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(Log[a+b\,x]-Log[c+d\,x])\right)\right)\right/$$

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

$$6\,b\,B\,c\,d^2\,n\,\left(-(a+b\,x)\,\left(-1+Log\left[\frac{a}{b}+x\right]\right)+a\,Log\left[\frac{a}{b}+x\right]^2+\frac{a^2\,\left(1+Log\left[\frac{a}{b}+x\right]\right)}{a+b\,x}+\right.$$

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

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

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

$$\left.\left.\left.((b\,c-a\,d)\,(a+b\,x))-2\,a\,\left(Log\left[\frac{c}{d}+x\right]\,Log\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+PolyLog\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)\right)$$

Problem 133: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^3 \left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(a\,g + b\,g\,x)^3}\,dx$$

Optimal (type 4, 361 leaves, 9 steps):

$$-\frac{2\,B\,d\,(b\,c - a\,d)\,i^3\,n\,(c+d\,x)}{b^3\,g^3\,(a+b\,x)} - \frac{B\,(b\,c - a\,d)\,i^3\,n\,(c+d\,x)^2}{4\,b^2\,g^3\,(a+b\,x)^2} + \frac{d^3\,i^3\,(a+b\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^4\,g^3} -$$

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

$$\frac{B\,d^2\,(b\,c - a\,d)\,i^3\,n\,\text{Log}\,[c+d\,x]}{b^4\,g^3} - \frac{3\,d^2\,(b\,c - a\,d)\,i^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^3} +$$

$$\frac{3\,B\,d^2\,(b\,c - a\,d)\,i^3\,n\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^3}$$

Result (type 4, 1324 leaves):

$$\frac{1}{4\,b^4\,g^3}$$

$$i^3\left(-\left(\left(b^3\,B\,c^3\,n\,\left(b^2\,c^2 - 4\,a\,b\,c\,d + a^2\,d^2 - 2\,b^2\,c\,d\,x - 2\,a\,b\,d^2\,x - 2\,b^2\,d^2\,x^2 + 2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{c}{d} + x\right]\right) - \right.\right.\right.$$

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

$$4\,a\,b\,c\,d\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + 2\,a^2\,d^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\Bigr)\Bigr)\Bigr/\left((b\,c - a\,d)^2\,(a+b\,x)^2\right)\right) +$$

$$4\,b\,d^3\,x\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) -$$

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

$$\frac{12\,d\,(b\,c - a\,d)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{a+b\,x} +$$

$$12\,d^2\,(b\,c - a\,d)\,\text{Log}\,[a+b\,x]\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) -$$

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

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

$$4\,a^2\,b\,c\,d\,\text{Log}\,[c+d\,x] + 2\,a^3\,d^2\,\text{Log}\,[c+d\,x] - 8\,a\,b^2\,c\,d\,x\,\text{Log}\,[c+d\,x] +$$

$$4\,a^2\,b\,d^2\,x\,\text{Log}\,[c+d\,x] - 4\,b^3\,c\,d\,x^2\,\text{Log}\,[c+d\,x] + 2\,a\,b^2\,d^2\,x^2\,\text{Log}\,[c+d\,x]\right) +$$

$$3\,b\,B\,c\,d^2\,n\left(2\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]^2 + \frac{8\,a\left(1+\mathrm{Log}\!\left[\frac{a}{b}+x\right]\right)}{a+b\,x} - \frac{a^2\left(1+2\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]\right)}{(a+b\,x)^2}\right.+$$

$$2\left(\frac{a\,(3\,a+4\,b\,x)}{(a+b\,x)^2}+2\,\mathrm{Log}[a+b\,x]\right)\left(-\mathrm{Log}\!\left[\frac{a}{b}+x\right]+\mathrm{Log}\!\left[\frac{c}{d}+x\right]+\mathrm{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$\left(8\,a\left((-b\,c+a\,d)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x])\right)\right)\bigg/$$

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

$$d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\mathrm{Log}[a+b\,x]-d\,(a+b\,x)\,\mathrm{Log}[c+d\,x])\bigg)-$$

$$\left.4\left(\mathrm{Log}\!\left[\frac{c}{d}+x\right]\mathrm{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\mathrm{PolyLog}\!\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)-$$

$$B\,d^3\,n\left(-4\,(a+b\,x)\left(-1+\mathrm{Log}\!\left[\frac{a}{b}+x\right]\right)+6\,a\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]^2+\frac{12\,a^2\left(1+\mathrm{Log}\!\left[\frac{a}{b}+x\right]\right)}{a+b\,x}-\right.$$

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

$$2\left(-2\,b\,x+\frac{a^2\,(5\,a+6\,b\,x)}{(a+b\,x)^2}+6\,a\,\mathrm{Log}[a+b\,x]\right)\left(-\mathrm{Log}\!\left[\frac{a}{b}+x\right]+\mathrm{Log}\!\left[\frac{c}{d}+x\right]+\mathrm{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$\left(12\,a^2\left((-b\,c+a\,d)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x])\right)\right)\bigg/$$

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

$$d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\mathrm{Log}[a+b\,x]-d\,(a+b\,x)\,\mathrm{Log}[c+d\,x])\bigg)-$$

$$\left.12\,a\left(\mathrm{Log}\!\left[\frac{c}{d}+x\right]\mathrm{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\mathrm{PolyLog}\!\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)$$

Problem 134: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^3\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(a\,g+b\,g\,x)^4}\,dx$$

Optimal (type 4, 326 leaves, 9 steps):

$$-\frac{B\,d^2\,i^3\,n\,(c+d\,x)}{b^3\,g^4\,(a+b\,x)}-\frac{B\,d\,i^3\,n\,(c+d\,x)^2}{4\,b^2\,g^4\,(a+b\,x)^2}-\frac{B\,i^3\,n\,(c+d\,x)^3}{9\,b\,g^4\,(a+b\,x)^3}-\frac{d^2\,i^3\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^3\,g^4\,(a+b\,x)}-$$

$$\frac{d\,i^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,b^2\,g^4\,(a+b\,x)^2}-\frac{i^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{3\,b\,g^4\,(a+b\,x)^3}-$$

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

Result (type 4, 2243 leaves) :

$$\frac{d^3\,i^3\,\text{Log}[a+b\,x]\,\left(A+B\,\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)}{b^4\,g^4}+\frac{1}{b^4\,g^4\,(a+b\,x)}$$

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

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

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

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

$$\frac{1}{3\,b^4\,g^4\,(a+b\,x)^3}\left(-A\,b^3\,c^3\,i^3+3\,a\,A\,b^2\,c^2\,d\,i^3-3\,a^2\,A\,b\,c\,d^2\,i^3+a^3\,A\,d^3\,i^3-\right.$$

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

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

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

$$\frac{1}{g^4}B\,c^3\,i^3\,n\,\left(-\frac{\left(\frac{a}{b}+x\right)\,\left(3\,\text{Log}\left[\frac{a}{b}+x\right]+9\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{27\,(a+b\,x)^4\,\text{Log}\left[\frac{a}{b}+x\right]}-\frac{1}{6\,b}\right.$$

$$\left(-\frac{b^2\,\left(\frac{c}{d}+x\right)^2}{\left(-a+\frac{b\,c}{d}\right)^5\,\left(1-\frac{b\,\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)^2}-\frac{4\,b\,\left(\frac{c}{d}+x\right)}{\left(-a+\frac{b\,c}{d}\right)^4\,\left(1-\frac{b\,\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)}+\right.$$

$$\left.\left(\frac{2\,b^3\,\left(\frac{c}{d}+x\right)^3}{\left(-a+\frac{b\,c}{d}\right)^6\,\left(1-\frac{b\,\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)^3}+\frac{6\,b^2\,\left(\frac{c}{d}+x\right)^2}{\left(-a+\frac{b\,c}{d}\right)^5\,\left(1-\frac{b\,\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)^2}+\frac{6\,b\,\left(\frac{c}{d}+x\right)}{\left(-a+\frac{b\,c}{d}\right)^4\,\left(1-\frac{b\,\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)}\right)\,\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$
\frac{2 \operatorname{Log}\left[1 - \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right]}{\left(-a + \frac{bc}{d}\right)^3} \Bigg) - \frac{-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{a}{c+dx} + \frac{bx}{c+dx}\right]}{3\,b\,(a+bx)^3} \Bigg) +
$$

$$
\frac{1}{g^4} 3\,B\,c^2\,d\,i^3\,n \left(-\frac{1 + 2\operatorname{Log}\left[\frac{a}{b}+x\right]}{4\,b^2\,(a+bx)^2} + \frac{a\left(1 + 3\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{9\,b^2\,(a+bx)^3} + \right.
$$

$$
\frac{a\left(-\frac{2\operatorname{Log}\left[\frac{c}{d}+x\right]}{(a+bx)^3} + \frac{d\left(\frac{(bc-ad)\,(-bc+3ad+2bdx)}{(a+bx)^2} + 2\,d^2\operatorname{Log}[a+bx] - 2\,d^2\operatorname{Log}[c+dx]\right)}{(bc-ad)^3}\right)}{6\,b^2} +
$$

$$
\frac{\operatorname{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+bx)\,(bc-ad+d\,(a+bx)\operatorname{Log}[a+bx] - d\,(a+bx)\operatorname{Log}[c+dx])}{(bc-ad)^2}}{2\,b^2\,(a+bx)^2} -
$$

$$
\left. \frac{(a + 3\,b\,x)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{a}{c+dx} + \frac{bx}{c+dx}\right]\right)}{6\,b^2\,(a+bx)^3} \right) + \frac{1}{g^4}
$$

$$
3\,B\,c\,d^2\,i^3\,n \left(-\frac{1 + \operatorname{Log}\left[\frac{a}{b}+x\right]}{b^3\,(a+bx)} + \frac{a\left(1 + 2\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{2\,b^3\,(a+bx)^2} - \frac{a^2\left(1 + 3\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{9\,b^3\,(a+bx)^3} - \right.
$$

$$
\frac{(-bc+ad)\operatorname{Log}\left[\frac{c}{d}+x\right] + d\,(a+bx)\,(\operatorname{Log}[a+bx] - \operatorname{Log}[c+dx])}{b^3\,(bc-ad)\,(a+bx)} -
$$

$$
\frac{a^2\left(-\frac{2\operatorname{Log}\left[\frac{c}{d}+x\right]}{(a+bx)^3} + \frac{d\left(\frac{(bc-ad)\,(-bc+3ad+2bdx)}{(a+bx)^2} + 2\,d^2\operatorname{Log}[a+bx] - 2\,d^2\operatorname{Log}[c+dx]\right)}{(bc-ad)^3}\right)}{6\,b^3} -
$$

$$
\frac{a\left(\operatorname{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+bx)\,(bc-ad+d\,(a+bx)\operatorname{Log}[a+bx] - d\,(a+bx)\operatorname{Log}[c+dx])}{(bc-ad)^2}\right)}{b^3\,(a+bx)^2} - \frac{1}{3\,b^3\,(a+bx)^3}
$$

$$
\left. (a^2 + 3\,a\,b\,x + 3\,b^2\,x^2)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right] + \operatorname{Log}\left[\frac{c}{d}+x\right] + \operatorname{Log}\left[\frac{a}{c+dx} + \frac{bx}{c+dx}\right]\right)\right) +
$$

$$\frac{1}{g^4} B d^3 i^3 n \left(\frac{\text{Log}\left[\frac{a}{b} + x\right]^2}{2 b^4} + \frac{3 a \left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{b^4 (a + b x)} - \frac{3 a^2 \left(1 + 2 \text{Log}\left[\frac{a}{b} + x\right]\right)}{4 b^4 (a + b x)^2} + \frac{a^3 \left(1 + 3 \text{Log}\left[\frac{a}{b} + x\right]\right)}{9 b^4 (a + b x)^3} + \right.$$

$$\left(3 a \left(\left(-b c + a d\right) \text{Log}\left[\frac{c}{d} + x\right] + d (a + b x) \left(\text{Log}[a + b x] - \text{Log}[c + d x]\right)\right)\right) \Big/$$

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

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

$$\left(\frac{a \left(11 a^2 + 27 a b x + 18 b^2 x^2\right)}{(a + b x)^3} + 6 \text{Log}[a + b x]\right) \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \right.$$

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

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

$$\int \frac{(a g + b g x)^3 \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{c i + d i x} \, dx$$

Optimal (type 4, 269 leaves, 6 steps):

$$\frac{g^3 (a + b x)^3 \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{3 d i} - \frac{(b c - a d) g^3 (a + b x)^2 \left(3 A + B n + 3 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{6 d^2 i} +$$

$$\frac{(b c - a d)^2 g^3 (a + b x) \left(6 A + 5 B n + 6 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{6 d^3 i} +$$

$$\frac{(b c - a d)^3 g^3 \left(6 A + 11 B n + 6 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \text{Log}\left[\frac{b c - a d}{b \, (c+d x)}\right]}{6 d^4 i} +$$

$$\frac{B (b c - a d)^3 g^3 n \, \text{PolyLog}\left[2, \frac{d \, (a+b x)}{b \, (c+d x)}\right]}{d^4 i}$$

Result (type 4, 1003 leaves):

$$\frac{1}{6\,d^4\,i}\,g^3\,\Bigg(6\,b^3\,B\,c^3\,n - 24\,a\,b^2\,B\,c^2\,d\,n + 36\,a^2\,b\,B\,c\,d^2\,n - 18\,a^3\,B\,d^3\,n + 6\,A\,b^3\,c^2\,d\,x - 18\,a\,A\,b^2\,c\,d^2\,x +$$

$$18\,a^2\,A\,b\,d^3\,x + 5\,b^3\,B\,c^2\,d\,n\,x - 12\,a\,b^2\,B\,c\,d^2\,n\,x + 7\,a^2\,b\,B\,d^3\,n\,x - 3\,A\,b^3\,c\,d^2\,x^2 + 9\,a\,A\,b^2\,d^3\,x^2 -$$

$$b^3\,B\,c\,d^2\,n\,x^2 + a\,b^2\,B\,d^3\,n\,x^2 + 2\,A\,b^3\,d^3\,x^3 - 6\,b^3\,B\,c^3\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big] + 18\,a\,b^2\,B\,c^2\,d\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big] -$$

$$18\,a^2\,b\,B\,c\,d^2\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big] + 3\,b^3\,B\,c^3\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2 - 9\,a\,b^2\,B\,c^2\,d\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2 +$$

$$9\,a^2\,b\,B\,c\,d^2\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2 - 3\,a^3\,B\,d^3\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]^2 + 3\,a^2\,b\,B\,c\,d^2\,n\,\mathrm{Log}[a+b\,x] -$$

$$7\,a^3\,B\,d^3\,n\,\mathrm{Log}[a+b\,x] + 6\,b^3\,B\,c^2\,d\,x\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 18\,a\,b^2\,B\,c\,d^2\,x\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] +$$

$$18\,a^2\,b\,B\,d^3\,x\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 3\,b^3\,B\,c\,d^2\,x^2\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] +$$

$$9\,a\,b^2\,B\,d^3\,x^2\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 2\,b^3\,B\,d^3\,x^3\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 6\,A\,b^3\,c^3\,\mathrm{Log}[c+d\,x] +$$

$$18\,a\,A\,b^2\,c^2\,d\,\mathrm{Log}[c+d\,x] - 18\,a^2\,A\,b\,c\,d^2\,\mathrm{Log}[c+d\,x] + 6\,a^3\,A\,d^3\,\mathrm{Log}[c+d\,x] -$$

$$5\,b^3\,B\,c^3\,n\,\mathrm{Log}[c+d\,x] + 9\,a\,b^2\,B\,c^2\,d\,n\,\mathrm{Log}[c+d\,x] - 6\,b^3\,B\,c^3\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}[c+d\,x] +$$

$$18\,a\,b^2\,B\,c^2\,d\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}[c+d\,x] - 18\,a^2\,b\,B\,c\,d^2\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}[c+d\,x] +$$

$$6\,a^3\,B\,d^3\,n\,\mathrm{Log}\Big[\frac{c}{d}+x\Big]\,\mathrm{Log}[c+d\,x] - 6\,b^3\,B\,c^3\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\mathrm{Log}[c+d\,x] +$$

$$18\,a\,b^2\,B\,c^2\,d\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\mathrm{Log}[c+d\,x] - 18\,a^2\,b\,B\,c\,d^2\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\mathrm{Log}[c+d\,x] +$$

$$6\,a^3\,B\,d^3\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\mathrm{Log}[c+d\,x] - 6\,B\,n\,\mathrm{Log}\Big[\frac{a}{b}+x\Big]$$

$$\Big(-a\,d\,\big(b^2\,c^2 - 3\,a\,b\,c\,d + 3\,a^2\,d^2\big) - \big(b\,c - a\,d\big)^3\,\mathrm{Log}[c+d\,x] + \big(b\,c - a\,d\big)^3\,\mathrm{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big) -$$

$$6\,B\,\big(b\,c - a\,d\big)^3\,n\,\mathrm{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Bigg)$$

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

$$\int \frac{(a\,g + b\,g\,x)^2\,\Big(A + B\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{c\,i + d\,i\,x}\,\mathbb{d}x$$

Optimal (type 4, 211 leaves, 5 steps):

$$\frac{g^2\,(a+b\,x)^2\,\Big(A + B\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{2\,d\,i} - \frac{(b\,c - a\,d)\,g^2\,(a+b\,x)\,\Big(2\,A + B\,n + 2\,B\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{2\,d^2\,i} -$$

$$\frac{(b\,c - a\,d)^2\,g^2\,\Big(2\,A + 3\,B\,n + 2\,B\,\mathrm{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)\,\mathrm{Log}\Big[\frac{b\,c-a\,d}{b\,(c+d\,x)}\Big]}{2\,d^3\,i} -$$

$$\frac{B\,(b\,c - a\,d)^2\,g^2\,n\,\mathrm{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^3\,i}$$

Result (type 4, 610 leaves):

$$\frac{1}{2\,d^3\,i}\,g^2$$

$$\Big(-2\,b^2\,B\,c^2\,n + 6\,a\,b\,B\,c\,d\,n - 4\,a^2\,B\,d^2\,n - 2\,A\,b^2\,c\,d\,x + 4\,a\,A\,b\,d^2\,x - b^2\,B\,c\,d\,n\,x + a\,b\,B\,d^2\,n\,x + A\,b^2\,d^2\,x^2 +$$

$$2\,b^2\,B\,c^2\,n\,\text{Log}\Big[\frac{c}{d}+x\Big] - 4\,a\,b\,B\,c\,d\,n\,\text{Log}\Big[\frac{c}{d}+x\Big] - b^2\,B\,c^2\,n\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 + 2\,a\,b\,B\,c\,d\,n\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 -$$

$$a^2\,B\,d^2\,n\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 - a^2\,B\,d^2\,n\,\text{Log}[a+b\,x] - 2\,b^2\,B\,c\,d\,x\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] +$$

$$4\,a\,b\,B\,d^2\,x\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + b^2\,B\,d^2\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 2\,A\,b^2\,c^2\,\text{Log}[c+d\,x] -$$

$$4\,a\,A\,b\,c\,d\,\text{Log}[c+d\,x] + 2\,a^2\,A\,d^2\,\text{Log}[c+d\,x] + b^2\,B\,c^2\,n\,\text{Log}[c+d\,x] +$$

$$2\,b^2\,B\,c^2\,n\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] - 4\,a\,b\,B\,c\,d\,n\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] +$$

$$2\,a^2\,B\,d^2\,n\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] + 2\,b^2\,B\,c^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\text{Log}[c+d\,x] -$$

$$4\,a\,b\,B\,c\,d\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\text{Log}[c+d\,x] + 2\,a^2\,B\,d^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\text{Log}[c+d\,x] -$$

$$2\,B\,n\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\Big(a\,d\,(b\,c - 2\,a\,d) + (b\,c - a\,d)^2\,\text{Log}[c+d\,x] - (b\,c - a\,d)^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big]\Big) +$$

$$2\,B\,(b\,c - a\,d)^2\,n\,\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c + a\,d}\Big]\Big)$$

Problem 137: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g+b\,g\,x)\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{c\,i+d\,i\,x}\,\mathbb{d}x$$

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

$$\frac{g\,(a+b\,x)\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{d\,i} +$$

$$\frac{(b\,c - a\,d)\,g\,\Big(A+B\,n+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)\,\text{Log}\Big[\frac{b\,c - a\,d}{b\,(c+d\,x)}\Big]}{d^2\,i} + \frac{B\,(b\,c - a\,d)\,g\,n\,\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^2\,i}$$

Result (type 4, 308 leaves):

$$\frac{1}{2\,d^2\,i}\,g\left(2\,b\,B\,c\,n-2\,a\,B\,d\,n+2\,A\,b\,d\,x-2\,b\,B\,c\,n\,\text{Log}\left[\frac{c}{d}+x\right]+b\,B\,c\,n\,\text{Log}\left[\frac{c}{d}+x\right]^2-\right.$$

$$a\,B\,d\,n\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,b\,B\,d\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-2\,A\,b\,c\,\text{Log}[c+d\,x]+$$

$$2\,a\,A\,d\,\text{Log}[c+d\,x]-2\,b\,B\,c\,n\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+2\,a\,B\,d\,n\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-$$

$$2\,b\,B\,c\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]+2\,a\,B\,d\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]+$$

$$2\,B\,n\,\text{Log}\left[\frac{a}{b}+x\right]\left(a\,d+(b\,c-a\,d)\,\text{Log}[c+d\,x]+(-b\,c+a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$\left.2\,B\,(-b\,c+a\,d)\,n\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)$$

Problem 143: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 4, 359 leaves, 9 steps):

$$\frac{3\,B\,(b\,c-a\,d)^2\,g^3\,n\,(a+b\,x)}{d^3\,i^2\,(c+d\,x)}-\frac{(b\,c-a\,d)^2\,g^3\,(6\,A+5\,B\,n)\,(a+b\,x)}{2\,d^3\,i^2\,(c+d\,x)}-$$

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

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

$$\frac{b\,(b\,c-a\,d)^2\,g^3\left(6\,A+5\,B\,n+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{2\,d^4\,i^2}-$$

$$\frac{3\,b\,B\,(b\,c-a\,d)^2\,g^3\,n\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i^2}$$

Result (type 4, 1109 leaves):

$$\frac{1}{2\,d^4\,i^2}\,g^3\left(-2\,b^2\,d\,(2\,b\,c-3\,a\,d)\,x\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+\right.$$

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

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

$$6\,b\,(b\,c-a\,d)^2\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\mathrm{Log}[c+d\,x]+$$

$$\left(2\,a^3\,B\,d^3\,n\left(b\,c-a\,d+b\,(c+d\,x)\,\mathrm{Log}\left[\frac{a}{b}+x\right]+(-b\,c+a\,d)\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-\right.\right.$$

$$\left.b\,c\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-b\,d\,x\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Bigg)\Bigg/$$

$$\left((b\,c-a\,d)\,(c+d\,x)\right)+3\,a^2\,b\,B\,d^2\,n\left(-\mathrm{Log}\left[\frac{c}{d}+x\right]^2+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}[c+d\,x]+\right.$$

$$2\left(-\frac{c}{c+d\,x}+\frac{b\,c\,\mathrm{Log}[a+b\,x]}{-b\,c+a\,d}+\frac{b\,c\,\mathrm{Log}[c+d\,x]}{b\,c-a\,d}-\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{Log}[c+d\,x]+\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right.$$

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

$$b^3\,B\,n\left(-4\,c^2+\frac{4\,a\,c\,d}{b}-c\,d\,x+\frac{a\,d^2\,x}{b}-\frac{2\,c^3}{c+d\,x}+4\,c^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]-3\,c^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2-\right.$$

$$\frac{a^2\,d^2\,\mathrm{Log}[a+b\,x]}{b^2}+\frac{2\,b\,c^3\,\mathrm{Log}[a+b\,x]}{-b\,c+a\,d}-4\,c\,d\,x\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+d^2\,x^2\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+$$

$$\frac{2\,c^3\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{c+d\,x}+c^2\,\mathrm{Log}[c+d\,x]+\frac{2\,b\,c^3\,\mathrm{Log}[c+d\,x]}{b\,c-a\,d}+6\,c^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}[c+d\,x]+6\,c^2$$

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

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

$$6\,a\,b^2\,B\,d\,n\left(d\left(\frac{a}{b}+x\right)\left(-1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)-(c+d\,x)\left(-1+\mathrm{Log}\left[\frac{c}{d}+x\right]\right)+c\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2+\right.$$

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

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

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

Problem 144: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^2 \left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(c\,i + d\,i\,x)^2}\,dx$$

Optimal (type 4, 275 leaves, 8 steps):

$$-\frac{2\,B\,(b\,c - a\,d)\,g^2\,n\,(a + b\,x)}{d^2\,i^2\,(c + d\,x)} + \frac{(b\,c - a\,d)\,g^2\,(2\,A + B\,n)\,(a + b\,x)}{d^2\,i^2\,(c + d\,x)} +$$

$$\frac{2\,B\,(b\,c - a\,d)\,g^2\,(a + b\,x)\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^2\,i^2\,(c + d\,x)} + \frac{g^2\,(a + b\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{d\,i^2\,(c + d\,x)} +$$

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

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

Result (type 4, 705 leaves):

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

$$\frac{(b \, c - a \, d)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - B \, n \, \text{Log}\left[\frac{a+b\,x}{c+d\,x} \right] \right)}{c + d \, x} -$$

$$2 \, b \, (b \, c - a \, d) \left(A + B \, \text{Log}\left[e \left(\frac{a + b \, x}{c + d \, x} \right)^n \right] - B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x} \right] \right) \text{Log}[c + d \, x] +$$

$$\left(a^2 \, B \, d^2 \, n \left(b \, c - a \, d + b \, (c + d \, x) \, \text{Log}\left[\frac{a}{b} + x \right] + (- b \, c + a \, d) \, \text{Log}\left[\frac{a + b \, x}{c + d \, x} \right] - \right.\right.$$

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

$$((b \, c - a \, d) \, (c + d \, x)) + a \, b \, B \, d \, n \left(- \text{Log}\left[\frac{c}{d} + x \right]^2 + 2 \, \text{Log}\left[\frac{c}{d} + x \right] \text{Log}[c + d \, x] + \right.$$

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

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

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

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

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

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

Problem 145: Result more than twice size of optimal antiderivative.

$$\int \frac{(a \, g + b \, g \, x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}{(c \, i + d \, i \, x)^2} \, dx$$

Optimal (type 4, 168 leaves, 7 steps):

$$- \frac{A \, g \, (a + b \, x)}{d \, i^2 \, (c + d \, x)} + \frac{B \, g \, n \, (a + b \, x)}{d \, i^2 \, (c + d \, x)} - \frac{B \, g \, (a + b \, x) \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right]}{d \, i^2 \, (c + d \, x)} -$$

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

Result (type 4, 411 leaves):

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

$$2\,b\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\text{Log}[c+d\,x]+$$

$$\left(2\,a\,B\,d\,n\left(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]+(-b\,c+a\,d)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-\right.\right.$$

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

$$((b\,c-a\,d)\,(c+d\,x))+b\,B\,n\left(-\text{Log}\left[\frac{c}{d}+x\right]^2+2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]+\right.$$

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

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

Problem 151: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(c\,i+d\,i\,x)^3}\,\mathbb{d}x$$

Optimal (type 4, 382 leaves, 9 steps):

$$-\frac{3\,B\,(b\,c-a\,d)\,g^3\,n\,(a+b\,x)^2}{4\,d^2\,i^3\,(c+d\,x)^2}-\frac{3\,b\,B\,(b\,c-a\,d)\,g^3\,n\,(a+b\,x)}{d^3\,i^3\,(c+d\,x)}+$$

$$\frac{b\,(b\,c-a\,d)\,g^3\,(3\,A+B\,n)\,(a+b\,x)}{d^3\,i^3\,(c+d\,x)}+\frac{3\,b\,B\,(b\,c-a\,d)\,g^3\,(a+b\,x)\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^3\,i^3\,(c+d\,x)}+$$

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

$$\frac{b^2\,(b\,c-a\,d)\,g^3\,\left(3\,A+B\,n+3\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^4\,i^3}+$$

$$\frac{3\,b^2\,B\,(b\,c-a\,d)\,g^3\,n\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i^3}$$

Result (type 4, 1317 leaves):

$$\frac{1}{4\,d^4\,i^3}\,g^3\left(4\,b^3\,d\,x\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+\right.$$

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

$$\frac{12\,b\,(b\,c-a\,d)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{c+d\,x}-$$

$$12\,b^2\,(b\,c-a\,d)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\text{Log}[c+d\,x]-$$

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

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

$$2\,b^2\,c^3\,\text{Log}[c+d\,x]-4\,a\,b\,c^2\,d\,\text{Log}[c+d\,x]+4\,b^2\,c^2\,d\,x\,\text{Log}[c+d\,x]-$$

$$\left.8\,a\,b\,c\,d^2\,x\,\text{Log}[c+d\,x]+2\,b^2\,c\,d^2\,x^2\,\text{Log}[c+d\,x]-4\,a\,b\,d^3\,x^2\,\text{Log}[c+d\,x]\right)-$$

$$\left(a^3\,B\,d^3\,n\,\left(-b^2\,c^2+4\,a\,b\,c\,d-a^2\,d^2+2\,b^2\,c\,d\,x+2\,a\,b\,d^2\,x+2\,b^2\,d^2\,x^2-\right.\right.$$

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

$$\left.\left.4\,b^2\,c\,d\,x\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,b^2\,d^2\,x^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left((b\,c-a\,d)^2\,(c+d\,x)^2\right)+$$

$$3\,a\,b^2\,B\,d\,n\,\left(-2\,\text{Log}\left[\frac{c}{d}+x\right]^2-\frac{8\,c\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{c+d\,x}+\frac{c^2\,\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{(c+d\,x)^2}+\right.$$

$$8\,c\,\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]}{c+d\,x}+\frac{b\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)}{-b\,c+a\,d}\right)+$$

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

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

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

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

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

$$6\,c\,\text{Log}\left[\frac{c}{d}+x\right]^2-\frac{12\,c^2\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{c+d\,x}+\frac{c^3\,\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{(c+d\,x)^2}-$$

$$12\,c^2\,\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{c+d\,x}+\frac{b\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)}{b\,c-a\,d}\right)+$$

$$2\,\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\left(-2\,d\,x+\frac{c^2\,(5\,c+6\,d\,x)}{(c+d\,x)^2}+6\,c\,\text{Log}[c+d\,x]\right)+$$

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

$$b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}[a+b\,x] - b\,(c+d\,x)\,\text{Log}[c+d\,x]) \,+$$

$$\left. 12\,c\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)$$

Problem 152: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g+b\,g\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(c\,i+d\,i\,x)^3}\,dx$$

Optimal (type 4, 263 leaves, 8 steps):

$$\frac{B\,g^2\,n\,(a+b\,x)^2}{4\,d\,i^3\,(c+d\,x)^2} - \frac{A\,b\,g^2\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)} + \frac{b\,B\,g^2\,n\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)} -$$

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

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

Result (type 4, 907 leaves):

$$\frac{1}{4\,d^3\,i^3}\,g^2\left(-\frac{2\,(b\,c-a\,d)^2\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{(c+d\,x)^2}+\right.$$

$$\frac{8\,b\,(b\,c-a\,d)\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)}{c+d\,x}+$$

$$4\,b^2\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,Log[c+d\,x]-$$

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

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

$$2\,b^2\,c^3\,Log[c+d\,x]-4\,a\,b\,c^2\,d\,Log[c+d\,x]+4\,b^2\,c^2\,d\,x\,Log[c+d\,x]-$$

$$\left.8\,a\,b\,c\,d^2\,x\,Log[c+d\,x]+2\,b^2\,c\,d^2\,x^2\,Log[c+d\,x]-4\,a\,b\,d^3\,x^2\,Log[c+d\,x]\right)-$$

$$\left(a^2\,B\,d^2\,n\,\left(-b^2\,c^2+4\,a\,b\,c\,d-a^2\,d^2+2\,b^2\,c\,d\,x+2\,a\,b\,d^2\,x+2\,b^2\,d^2\,x^2-\right.\right.$$

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

$$\left.\left.4\,b^2\,c\,d\,x\,Log\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,b^2\,d^2\,x^2\,Log\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left((b\,c-a\,d)^2\,(c+d\,x)^2\right)+$$

$$b^2\,B\,n\,\left(-2\,Log\left[\frac{c}{d}+x\right]^2-\frac{8\,c\,\left(1+Log\left[\frac{c}{d}+x\right]\right)}{c+d\,x}+\frac{c^2\,\left(1+2\,Log\left[\frac{c}{d}+x\right]\right)}{(c+d\,x)^2}+\right.$$

$$8\,c\,\left(\frac{Log\left[\frac{a}{b}+x\right]}{c+d\,x}+\frac{b\,\left(Log[a+b\,x]-Log[c+d\,x]\right)}{-b\,c+a\,d}\right)+$$

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

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

$$b\,(c+d\,x)\,\left(b\,c-a\,d+b\,(c+d\,x)\,Log[a+b\,x]-b\,(c+d\,x)\,Log[c+d\,x]\right)\Bigg)+$$

$$\left.\left.4\,\left(Log\left[\frac{a}{b}+x\right]\,Log\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+PolyLog\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right)$$

Problem 153: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)\,\left(A+B\,Log\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(c\,i+d\,i\,x)^3}\,dx$$

Optimal (type 3, 89 leaves, 2 steps):

$$-\frac{B\,g\,n\,(a+b\,x)^2}{4\,(b\,c-a\,d)\,i^3\,(c+d\,x)^2}+\frac{g\,(a+b\,x)^2\,\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)\,i^3\,(c+d\,x)^2}$$

Result (type 3, 216 leaves):

$$\left(g\left(2\,A\,b^2\,c^2-2\,a^2\,A\,d^2-b^2\,B\,c^2\,n+a^2\,B\,d^2\,n+4\,A\,b^2\,c\,d\,x-\right.\right.$$
$$4\,a\,A\,b\,d^2\,x-2\,b^2\,B\,c\,d\,n\,x+2\,a\,b\,B\,d^2\,n\,x-2\,b^2\,B\,n\,(c+d\,x)^2\,\mathrm{Log}[a+b\,x]+$$
$$2\,B\,(b\,c-a\,d)\,(b\,c+a\,d+2\,b\,d\,x)\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+2\,b^2\,B\,c^2\,n\,\mathrm{Log}[c+d\,x]+$$
$$\left.\left.4\,b^2\,B\,c\,d\,n\,x\,\mathrm{Log}[c+d\,x]+2\,b^2\,B\,d^2\,n\,x^2\,\mathrm{Log}[c+d\,x]\right)\right)\Big/\left(4\,d^2\,(-b\,c+a\,d)\,i^3\,(c+d\,x)^2\right)$$

Problem 159: Result more than twice size of optimal antiderivative.

$$\int (a\,g+b\,g\,x)^3\,(c\,i+d\,i\,x)\,\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 584 leaves, 11 steps):

$$\frac{3\,B^2\,(b\,c-a\,d)^4\,g^3\,i\,n^2\,x}{10\,b\,d^3}-\frac{3\,B^2\,(b\,c-a\,d)^3\,g^3\,i\,n^2\,(c+d\,x)^2}{20\,d^4}+$$
$$\frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,i\,n^2\,(c+d\,x)^3}{30\,d^4}-\frac{B\,(b\,c-a\,d)^2\,g^3\,i\,n\,(a+b\,x)^3\,\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{30\,b^2\,d}-$$
$$\frac{B\,(b\,c-a\,d)\,g^3\,i\,n\,(a+b\,x)^4\,\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{10\,b^2}+$$
$$\frac{(b\,c-a\,d)\,g^3\,i\,(a+b\,x)^4\,\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{20\,b^2}+\frac{g^3\,i\,(a+b\,x)^4\,(c+d\,x)\,\left(A+B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{5\,b}+$$
$$\frac{B\,(b\,c-a\,d)^3\,g^3\,i\,n\,(a+b\,x)^2\,\left(3\,A+B\,n+3\,B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{60\,b^2\,d^2}-$$
$$\frac{B\,(b\,c-a\,d)^4\,g^3\,i\,n\,(a+b\,x)\,\left(6\,A+5\,B\,n+6\,B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{60\,b^2\,d^3}-$$
$$\frac{B\,(b\,c-a\,d)^5\,g^3\,i\,n\,\left(6\,A+11\,B\,n+6\,B\,\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\mathrm{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{60\,b^2\,d^4}-$$
$$\frac{B^2\,(b\,c-a\,d)^5\,g^3\,i\,n^2\,\mathrm{Log}[c+d\,x]}{10\,b^2\,d^4}-\frac{B^2\,(b\,c-a\,d)^5\,g^3\,i\,n^2\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{10\,b^2\,d^4}$$

Result (type 4, 3427 leaves):

$$\frac{1}{60\,b^2\,d^4}$$
$$g^3\,i\left(-6\,b^5\,B^2\,c^5\,n^2+36\,a\,b^4\,B^2\,c^4\,d\,n^2-90\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2+90\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2-24\,a^4\,b\,B^2\,c\,d^4\,n^2-\right.$$
$$6\,a^5\,B^2\,d^5\,n^2+60\,a^3\,A^2\,b^2\,c\,d^4\,x-6\,A\,b^5\,B\,c^4\,d\,n\,x+30\,a\,A\,b^4\,B\,c^3\,d^2\,n\,x-60\,a^2\,A\,b^3\,B\,c^2\,d^3\,n\,x+$$
$$30\,a^3\,A\,b^2\,B\,c\,d^4\,n\,x+6\,a^4\,A\,b\,B\,d^5\,n\,x+b^5\,B^2\,c^4\,d\,n^2\,x-8\,a\,b^4\,B^2\,c^3\,d^2\,n^2\,x+24\,a^2\,b^3\,B^2\,c^2\,d^3\,n^2\,x-$$

$28 a^3 b^2 B^2 c d^4 n^2 x + 11 a^4 b B^2 d^5 n^2 x + 90 a^2 A^2 b^3 c d^4 x^2 + 30 a^3 A^2 b^2 d^5 x^2 + 3 A b^5 B c^3 d^2 n x^2 -$
$15 a A b^4 B c^2 d^3 n x^2 - 15 a^2 A b^3 B c d^4 n x^2 + 27 a^3 A b^2 B d^5 n x^2 - 2 b^5 B^2 c^3 d^2 n^2 x^2 +$
$12 b^4 B^2 c^2 d^3 n^2 x^2 - 18 a^2 b^3 B^2 c d^4 n^2 x^2 + 8 a^3 b^2 B^2 d^5 n^2 x^2 + 60 a A^2 b^4 c d^4 x^3 +$
$60 a^2 A^2 b^3 d^5 x^3 - 2 A b^5 B c^2 d^3 n x^3 - 20 a A b^4 B c d^4 n x^3 + 22 a^2 A b^3 B d^5 n x^3 +$
$2 b^5 B^2 c^2 d^3 n^2 x^3 - 4 a b^4 B^2 c d^4 n^2 x^3 + 2 a^2 b^3 B^2 d^5 n^2 x^3 + 15 A^2 b^5 c d^4 x^4 + 45 a A^2 b^4 d^5 x^4 -$

$6 A b^5 B c d^4 n x^4 + 6 a A b^4 B d^5 n x^4 + 12 A^2 b^5 d^5 x^5 - 6 a b^4 B^2 c^4 d n^2 \text{Log}\left[\frac{a}{b} + x\right] +$

$30 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}\left[\frac{a}{b} + x\right] - 60 a^3 b^2 B^2 c^2 d^3 n^2 \text{Log}\left[\frac{a}{b} + x\right] + 30 a^4 b B^2 c d^4 n^2 \text{Log}\left[\frac{a}{b} + x\right] +$

$6 a^5 B^2 d^5 n^2 \text{Log}\left[\frac{a}{b} + x\right] + 15 a^4 b B^2 c d^4 n^2 \text{Log}\left[\frac{a}{b} + x\right]^2 - 3 a^5 B^2 d^5 n^2 \text{Log}\left[\frac{a}{b} + x\right]^2 +$

$6 b^5 B^2 c^5 n^2 \text{Log}\left[\frac{c}{d} + x\right] - 30 a b^4 B^2 c^4 d n^2 \text{Log}\left[\frac{c}{d} + x\right] + 60 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}\left[\frac{c}{d} + x\right] -$

$30 a^3 b^2 B^2 c^2 d^3 n^2 \text{Log}\left[\frac{c}{d} + x\right] - 6 a^4 b B^2 c d^4 n^2 \text{Log}\left[\frac{c}{d} + x\right] - 3 b^5 B^2 c^5 n^2 \text{Log}\left[\frac{c}{d} + x\right]^2 +$

$15 a b^4 B^2 c^4 d n^2 \text{Log}\left[\frac{c}{d} + x\right]^2 - 30 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}\left[\frac{c}{d} + x\right]^2 + 30 a^3 b^2 B^2 c^2 d^3 n^2 \text{Log}\left[\frac{c}{d} + x\right]^2 +$

$30 a^4 A b B c d^4 n \text{Log}[a + b x] - 6 a^5 A B d^5 n \text{Log}[a + b x] - 3 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}[a + b x] +$
$13 a^3 b^2 B^2 c^2 d^3 n^2 \text{Log}[a + b x] + a^4 b B^2 c d^4 n^2 \text{Log}[a + b x] - 11 a^5 B^2 d^5 n^2 \text{Log}[a + b x] -$
$30 a^4 b B^2 c d^4 n^2 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] + 6 a^5 B^2 d^5 n^2 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] +$

$30 a^4 b B^2 c d^4 n^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] - 6 a^5 B^2 d^5 n^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] -$

$30 a^4 b B^2 c d^4 n^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] + 6 a^5 B^2 d^5 n^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] +$

$120 a^3 A b^2 B c d^4 x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 6 b^5 B^2 c^4 d n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$30 a b^4 B^2 c^3 d^2 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 60 a^2 b^3 B^2 c^2 d^3 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$30 a^3 b^2 B^2 c d^4 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 6 a^4 b B^2 d^5 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$180 a^2 A b^3 B c d^4 x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 60 a^3 A b^2 B d^5 x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$3 b^5 B^2 c^3 d^2 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 15 a b^4 B^2 c^2 d^3 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$15 a^2 b^3 B^2 c d^4 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 27 a^3 b^2 B^2 d^5 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$120 a A b^4 B c d^4 x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 120 a^2 A b^3 B d^5 x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$2 b^5 B^2 c^2 d^3 n x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 20 a b^4 B^2 c d^4 n x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$22 a^2 b^3 B^2 d^5 n x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 30 A b^5 B c d^4 x^4 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$90 a A b^4 B d^5 x^4 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 6 b^5 B^2 c d^4 n x^4 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$6 a b^4 B^2 d^5 n x^4 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 24 A b^5 B d^5 x^5 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$30 a^4 b B^2 c d^4 n \text{Log}[a + b x] \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 6 a^5 B^2 d^5 n \text{Log}[a + b x] \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$$60 a^3 b^2 B^2 c d^4 x \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 90 a^2 b^3 B^2 c d^4 x^2 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 +$$

$$30 a^3 b^2 B^2 d^5 x^2 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 60 a b^4 B^2 c d^4 x^3 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 +$$

$$60 a^2 b^3 B^2 d^5 x^3 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 15 b^5 B^2 c d^4 x^4 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 +$$

$$45 a b^4 B^2 d^5 x^4 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 12 b^5 B^2 d^5 x^5 \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 6 A b^5 B c^5 n \, Log[c+d x] -$$

$$30 a A b^4 B c^4 d n \, Log[c+d x] + 60 a^2 A b^3 B c^3 d^2 n \, Log[c+d x] - 60 a^3 A b^2 B c^2 d^3 n \, Log[c+d x] -$$
$$b^5 B^2 c^5 n^2 \, Log[c+d x] + 11 a b^4 B^2 c^4 d n^2 \, Log[c+d x] - 37 a^2 b^3 B^2 c^3 d^2 n^2 \, Log[c+d x] +$$

$$27 a^3 b^2 B^2 c^2 d^3 n^2 \, Log[c+d x] - 6 b^5 B^2 c^5 n^2 \, Log\left[\frac{a}{b}+x\right] Log[c+d x] +$$

$$30 a b^4 B^2 c^4 d n^2 \, Log\left[\frac{a}{b}+x\right] Log[c+d x] - 60 a^2 b^3 B^2 c^3 d^2 n^2 \, Log\left[\frac{a}{b}+x\right] Log[c+d x] +$$

$$60 a^3 b^2 B^2 c^2 d^3 n^2 \, Log\left[\frac{a}{b}+x\right] Log[c+d x] + 6 b^5 B^2 c^5 n^2 \, Log\left[\frac{c}{d}+x\right] Log[c+d x] -$$

$$30 a b^4 B^2 c^4 d n^2 \, Log\left[\frac{c}{d}+x\right] Log[c+d x] + 60 a^2 b^3 B^2 c^3 d^2 n^2 \, Log\left[\frac{c}{d}+x\right] Log[c+d x] -$$

$$60 a^3 b^2 B^2 c^2 d^3 n^2 \, Log\left[\frac{c}{d}+x\right] Log[c+d x] + 6 b^5 B^2 c^5 n \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right] Log[c+d x] -$$

$$30 a b^4 B^2 c^4 d n \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right] Log[c+d x] + 60 a^2 b^3 B^2 c^3 d^2 n \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right] Log[c+d x] -$$

$$60 a^3 b^2 B^2 c^2 d^3 n \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right] Log[c+d x] +$$

$$6 b^5 B^2 c^5 n^2 \, Log\left[\frac{a}{b}+x\right] Log\left[\frac{b(c+d x)}{b c - a d}\right] - 30 a b^4 B^2 c^4 d n^2 \, Log\left[\frac{a}{b}+x\right] Log\left[\frac{b(c+d x)}{b c - a d}\right] +$$

$$60 a^2 b^3 B^2 c^3 d^2 n^2 \, Log\left[\frac{a}{b}+x\right] Log\left[\frac{b(c+d x)}{b c - a d}\right] - 60 a^3 b^2 B^2 c^2 d^3 n^2 \, Log\left[\frac{a}{b}+x\right] Log\left[\frac{b(c+d x)}{b c - a d}\right] +$$

$$6 b^2 B^2 c^2 \left(b^3 c^3 - 5 a b^2 c^2 d + 10 a^2 b c d^2 - 10 a^3 d^3\right) n^2 \, PolyLog\left[2, \frac{d(a+b x)}{-b c + a d}\right] +$$

$$6 a^4 B^2 d^4 \left(-5 b c + a d\right) n^2 \, PolyLog\left[2, \frac{b(c+d x)}{b c - a d}\right]\Big)$$

Problem 160: Result more than twice size of optimal antiderivative.

$$\int (a g + b g x)^2 (c i + d i x) \left(A + B \, Log\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 487 leaves, 10 steps):

$$-\frac{B^2 \left(b\,c - a\,d\right)^3 g^2\,i\,n^2\,x}{3\,b\,d^2} + \frac{B^2 \left(b\,c - a\,d\right)^2 g^2\,i\,n^2 \left(c + d\,x\right)^2}{12\,d^3} -$$

$$\frac{B \left(b\,c - a\,d\right)^2 g^2\,i\,n \left(a + b\,x\right)^2 \left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{12\,b^2\,d} -$$

$$\frac{B \left(b\,c - a\,d\right) g^2\,i\,n \left(a + b\,x\right)^3 \left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{6\,b^2} +$$

$$\frac{\left(b\,c - a\,d\right) g^2\,i \left(a + b\,x\right)^3 \left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{12\,b^2} + \frac{g^2\,i \left(a + b\,x\right)^3 \left(c + d\,x\right) \left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,b} +$$

$$\frac{B \left(b\,c - a\,d\right)^3 g^2\,i\,n \left(a + b\,x\right) \left(2\,A + B\,n + 2\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{12\,b^2\,d^2} +$$

$$\frac{B \left(b\,c - a\,d\right)^4 g^2\,i\,n \left(2\,A + 3\,B\,n + 2\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right) \text{Log}\left[\frac{b\,c - a\,d}{b\,(c+d\,x)}\right]}{12\,b^2\,d^3} +$$

$$\frac{B^2 \left(b\,c - a\,d\right)^4 g^2\,i\,n^2\,\text{Log}\left[c + d\,x\right]}{6\,b^2\,d^3} + \frac{B^2 \left(b\,c - a\,d\right)^4 g^2\,i\,n^2\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{6\,b^2\,d^3}$$

Result (type 4, 2520 leaves):

$$\frac{1}{12\,b^2\,d^3}\,g^2\,i$$

$$\left(2\,b^4\,B^2\,c^4\,n^2 - 10\,a\,b^3\,B^2\,c^3\,d\,n^2 + 12\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2 - 2\,a^3\,b\,B^2\,c\,d^3\,n^2 - 2\,a^4\,B^2\,d^4\,n^2 + 12\,a^2\,A^2\,b^2\,c\,d^3\,x + \right.$$

$$2\,A\,b^4\,B\,c^3\,d\,n\,x - 8\,a\,A\,b^3\,B\,c^2\,d^2\,n\,x + 4\,a^2\,A\,b^2\,B\,c\,d^3\,n\,x + 2\,a^3\,A\,b\,B\,d^4\,n\,x - b^4\,B^2\,c^3\,d\,n^2\,x +$$

$$5\,a\,b^3\,B^2\,c^2\,d^2\,n^2\,x - 7\,a^2\,b^2\,B^2\,c\,d^3\,n^2\,x + 3\,a^3\,b\,B^2\,d^4\,n^2\,x + 12\,a\,A^2\,b^3\,c\,d^3\,x^2 +$$

$$6\,a^2\,A^2\,b^2\,d^4\,x^2 - A\,b^4\,B\,c^2\,d^2\,n\,x^2 - 4\,a\,A\,b^3\,B\,c\,d^3\,n\,x^2 + 5\,a^2\,A\,b^2\,B\,d^4\,n\,x^2 + b^4\,B^2\,c^2\,d^2\,n^2\,x^2 -$$

$$2\,a\,b^3\,B^2\,c\,d^3\,n^2\,x^2 + a^2\,b^2\,B^2\,d^4\,n^2\,x^2 + 4\,A^2\,b^4\,c\,d^3\,x^3 + 8\,a\,A^2\,b^3\,d^4\,x^3 - 2\,A\,b^4\,B\,c\,d^3\,n\,x^3 +$$

$$2\,a\,A\,b^3\,B\,d^4\,n\,x^3 + 3\,A^2\,b^4\,d^4\,x^4 + 2\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b} + x\right] - 8\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b} + x\right] +$$

$$4\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b} + x\right] + 2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b} + x\right] + 4\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]^2 -$$

$$a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]^2 - 2\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d} + x\right] + 8\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d} + x\right] -$$

$$4\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right] - 2\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d} + x\right] + b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 -$$

$$4\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 + 6\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 + 8\,a^3\,A\,b\,B\,c\,d^3\,n\,\text{Log}\left[a + b\,x\right] -$$

$$2\,a^4\,A\,B\,d^4\,n\,\text{Log}\left[a + b\,x\right] + a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[a + b\,x\right] + 2\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[a + b\,x\right] -$$

$$3\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[a + b\,x\right] - 8\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]\text{Log}\left[a + b\,x\right] +$$

$$2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]\text{Log}\left[a + b\,x\right] + 8\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\text{Log}\left[a + b\,x\right] -$$

$$2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\text{Log}\left[a + b\,x\right] - 8\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] +$$

$$2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] + 24\,a^2\,A\,b^2\,B\,c\,d^3\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$2 b^4 B^2 c^3 d n x \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 8 a b^3 B^2 c^2 d^2 n x \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$4 a^2 b^2 B^2 c d^3 n x \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 2 a^3 b B^2 d^4 n x \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$24 a A b^3 B c d^3 x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 12 a^2 A b^2 B d^4 x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] -$

$b^4 B^2 c^2 d^2 n x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 4 a b^3 B^2 c d^3 n x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$5 a^2 b^2 B^2 d^4 n x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 8 A b^4 B c d^3 x^3 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$16 a A b^3 B d^4 x^3 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 2 b^4 B^2 c d^3 n x^3 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$2 a b^3 B^2 d^4 n x^3 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 6 A b^4 B d^4 x^4 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$8 a^3 b B^2 c d^3 n \log[a+b x] \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 2 a^4 B^2 d^4 n \log[a+b x] \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$

$12 a^2 b^2 B^2 c d^3 x \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 12 a b^3 B^2 c d^3 x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 +$

$6 a^2 b^2 B^2 d^4 x^2 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 4 b^4 B^2 c d^3 x^3 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 +$

$8 a b^3 B^2 d^4 x^3 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 3 b^4 B^2 d^4 x^4 \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 -$

$2 A b^4 B c^4 n \log[c+d x] + 8 a A b^3 B c^3 d n \log[c+d x] - 12 a^2 A b^2 B c^2 d^2 n \log[c+d x] +$
$b^4 B^2 c^4 n^2 \log[c+d x] - 6 a b^3 B^2 c^3 d n^2 \log[c+d x] + 5 a^2 b^2 B^2 c^2 d^2 n^2 \log[c+d x] +$
$2 b^4 B^2 c^4 n^2 \log\left[\frac{a}{b}+x\right] \log[c+d x] - 8 a b^3 B^2 c^3 d n^2 \log\left[\frac{a}{b}+x\right] \log[c+d x] +$

$12 a^2 b^2 B^2 c^2 d^2 n^2 \log\left[\frac{a}{b}+x\right] \log[c+d x] - 2 b^4 B^2 c^4 n^2 \log\left[\frac{c}{d}+x\right] \log[c+d x] +$

$8 a b^3 B^2 c^3 d n^2 \log\left[\frac{c}{d}+x\right] \log[c+d x] - 12 a^2 b^2 B^2 c^2 d^2 n^2 \log\left[\frac{c}{d}+x\right] \log[c+d x] -$

$2 b^4 B^2 c^4 n \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \log[c+d x] + 8 a b^3 B^2 c^3 d n \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \log[c+d x] -$

$12 a^2 b^2 B^2 c^2 d^2 n \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \log[c+d x] - 2 b^4 B^2 c^4 n^2 \log\left[\frac{a}{b}+x\right] \log\left[\frac{b (c+d x)}{b c - a d}\right] +$

$8 a b^3 B^2 c^3 d n^2 \log\left[\frac{a}{b}+x\right] \log\left[\frac{b (c+d x)}{b c - a d}\right] - 12 a^2 b^2 B^2 c^2 d^2 n^2 \log\left[\frac{a}{b}+x\right] \log\left[\frac{b (c+d x)}{b c - a d}\right] -$

$2 b^2 B^2 c^2 \left(b^2 c^2 - 4 a b c d + 6 a^2 d^2\right) n^2 \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c + a d}\right] +$

$2 a^3 B^2 d^3 \left(-4 b c + a d\right) n^2 \text{PolyLog}\left[2, \frac{b (c+d x)}{b c - a d}\right]\Big)$

Problem 161: Result more than twice size of optimal antiderivative.

$$\int (a g + b g x) (c i + d i x) \left(A + B \log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 372 leaves, 9 steps):

$$\frac{B^2 (b c - a d)^2 g i n^2 x}{3 b d} - \frac{B (b c - a d)^2 g i n (a + b x) \left(A + B \, Log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{3 b^2 d} -$$

$$\frac{B (b c - a d) g i n (a + b x)^2 \left(A + B \, Log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{3 b^2} +$$

$$\frac{(b c - a d) g i (a + b x)^2 \left(A + B \, Log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{6 b^2} + \frac{g i (a + b x)^2 (c + d x) \left(A + B \, Log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{3 b} -$$

$$\frac{B (b c - a d)^3 g i n \left(A + B n + B \, Log\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) Log\left[\frac{b c-a d}{b (c+d x)}\right]}{3 b^2 d^2} -$$

$$\frac{B^2 (b c - a d)^3 g i n^2 \, Log[c + d x]}{3 b^2 d^2} - \frac{B^2 (b c - a d)^3 g i n^2 \, PolyLog\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{3 b^2 d^2}$$

Result (type 4, 1606 leaves) :

$$\frac{1}{6\,b^2\,d^2}$$

$$g\,i\,\Big(-2\,b^3\,B^2\,c^3\,n^2 + 2\,a\,b^2\,B^2\,c^2\,d\,n^2 + 2\,a^2\,b\,B^2\,c\,d^2\,n^2 - 2\,a^3\,B^2\,d^3\,n^2 + 6\,a\,A^2\,b^2\,c\,d^2\,x - 2\,A\,b^3\,B\,c^2\,d\,n\,x +$$

$$2\,a^2\,A\,b\,B\,d^3\,n\,x + 2\,b^3\,B^2\,c^2\,d\,n^2\,x - 4\,a\,b^2\,B^2\,c\,d^2\,n^2\,x + 2\,a^2\,b\,B^2\,d^3\,n^2\,x + 3\,A^2\,b^3\,c\,d^2\,x^2 +$$

$$3\,a\,A^2\,b^2\,d^3\,x^2 - 2\,A\,b^3\,B\,c\,d^2\,n\,x^2 + 2\,a\,A\,b^2\,B\,d^3\,n\,x^2 + 2\,A^2\,b^3\,d^3\,x^3 - 2\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big] +$$

$$2\,a^3\,B^2\,d^3\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big] + 3\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 - a^3\,B^2\,d^3\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 +$$

$$2\,b^3\,B^2\,c^3\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big] - 2\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big] - b^3\,B^2\,c^3\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 +$$

$$3\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 + 6\,a^2\,A\,b\,B\,c\,d^2\,n\,\text{Log}[a+b\,x] - 2\,a^3\,A\,B\,d^3\,n\,\text{Log}[a+b\,x] +$$

$$2\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}[a+b\,x] - 2\,a^3\,B^2\,d^3\,n^2\,\text{Log}[a+b\,x] - 6\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x] +$$

$$2\,a^3\,B^2\,d^3\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x] + 6\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x] -$$

$$2\,a^3\,B^2\,d^3\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x] - 6\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$2\,a^3\,B^2\,d^3\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 12\,a\,A\,b^2\,B\,c\,d^2\,x\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] -$$

$$2\,b^3\,B^2\,c^2\,d\,n\,x\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 2\,a^2\,b\,B^2\,d^3\,n\,x\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] +$$

$$6\,A\,b^3\,B\,c\,d^2\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 6\,a\,A\,b^2\,B\,d^3\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] -$$

$$2\,b^3\,B^2\,c\,d^2\,n\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 2\,a\,b^2\,B^2\,d^3\,n\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] +$$

$$4\,A\,b^3\,B\,d^3\,x^3\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 6\,a^2\,b\,B^2\,c\,d^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] -$$

$$2\,a^3\,B^2\,d^3\,n\,\text{Log}[a+b\,x]\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] + 6\,a\,b^2\,B^2\,c\,d^2\,x\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 +$$

$$3\,b^3\,B^2\,c\,d^2\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 + 3\,a\,b^2\,B^2\,d^3\,x^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 +$$

$$2\,b^3\,B^2\,d^3\,x^3\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 + 2\,A\,b^3\,B\,c^3\,n\,\text{Log}[c+d\,x] - 6\,a\,A\,b^2\,B\,c^2\,d\,n\,\text{Log}[c+d\,x] -$$

$$2\,b^3\,B^2\,c^3\,n^2\,\text{Log}[c+d\,x] + 2\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}[c+d\,x] - 2\,b^3\,B^2\,c^3\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] +$$

$$6\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] + 2\,b^3\,B^2\,c^3\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] -$$

$$6\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] + 2\,b^3\,B^2\,c^3\,n\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\text{Log}[c+d\,x] -$$

$$6\,a\,b^2\,B^2\,c^2\,d\,n\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\text{Log}[c+d\,x] + 2\,b^3\,B^2\,c^3\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$6\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 2\,b^2\,B^2\,c^2\,(b\,c-3\,a\,d)\,n^2\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] +$$

$$2\,a^2\,B^2\,d^2\,(-3\,b\,c+a\,d)\,n^2\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)$$

Problem 162: Result more than twice size of optimal antiderivative.

$$\int (c\,i + d\,i\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 220 leaves, 7 steps):

$$-\frac{B\,(b\,c - a\,d)\,i\,n\,(a+b\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^2} +$$

$$\frac{i\,(c+d\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,d} + \frac{B^2\,(b\,c - a\,d)^2\,i\,n^2\,\text{Log}[c+d\,x]}{b^2\,d} +$$

$$\frac{B\,(b\,c - a\,d)^2\,i\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,d} - \frac{B^2\,(b\,c - a\,d)^2\,i\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,d}$$

Result (type 4, 941 leaves):

$$\frac{1}{2\,b^2\,d}\,i\,\left(-2\,b^2\,B^2\,c^2\,n^2 + 4\,a\,b\,B^2\,c\,d\,n^2 - 2\,a^2\,B^2\,d^2\,n^2 + 2\,A^2\,b^2\,c\,d\,x - 2\,A\,b^2\,B\,c\,d\,n\,x + 2\,a\,A\,b\,B\,d^2\,n\,x +\right.$$

$$A^2\,b^2\,d^2\,x^2 - 2\,a\,b\,B^2\,c\,d\,n^2\,\text{Log}\left[\frac{a}{b} + x\right] + 2\,a^2\,B^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b} + x\right] + 2\,a\,b\,B^2\,c\,d\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]^2 -$$

$$a^2\,B^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\,b^2\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right] - 2\,a\,b\,B^2\,c\,d\,n^2\,\text{Log}\left[\frac{c}{d} + x\right] +$$

$$b^2\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 + 4\,a\,A\,b\,B\,c\,d\,n\,\text{Log}[a+b\,x] - 2\,a^2\,A\,B\,d^2\,n\,\text{Log}[a+b\,x] -$$

$$4\,a\,b\,B^2\,c\,d\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}[a+b\,x] + 2\,a^2\,B^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}[a+b\,x] +$$

$$4\,a\,b\,B^2\,c\,d\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}[a+b\,x] - 2\,a^2\,B^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}[a+b\,x] -$$

$$4\,a\,b\,B^2\,c\,d\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] + 2\,a^2\,B^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] +$$

$$4\,A\,b^2\,B\,c\,d\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,b^2\,B^2\,c\,d\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$2\,a\,b\,B^2\,d^2\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 2\,A\,b^2\,B\,d^2\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$4\,a\,b\,B^2\,c\,d\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,a^2\,B^2\,d^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$2\,b^2\,B^2\,c\,d\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + b^2\,B^2\,d^2\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,A\,b^2\,B\,c^2\,n\,\text{Log}[c+d\,x] +$$

$$2\,b^2\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}[c+d\,x] - 2\,b^2\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}[c+d\,x] -$$

$$2\,b^2\,B^2\,c^2\,n\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\text{Log}[c+d\,x] - 2\,b^2\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right] -$$

$$\left.2\,b^2\,B^2\,c^2\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] + 2\,a\,B^2\,d\,(-2\,b\,c + a\,d)\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)$$

Problem 163: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{a\,g + b\,g\,x}\,dx$$

Optimal (type 4, 306 leaves, 8 steps):

$$\frac{d\,i\,(a + b\,x)\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^2\,g} + \frac{2\,B\,(b\,c - a\,d)\,i\,n\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,Log\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{b^2\,g} -$$

$$\frac{(b\,c - a\,d)\,i\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,Log\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,g} + \frac{2\,B^2\,(b\,c - a\,d)\,i\,n^2\,PolyLog\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b^2\,g} +$$

$$\frac{2\,B\,(b\,c - a\,d)\,i\,n\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,PolyLog\left[2, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,g} +$$

$$\frac{2\,B^2\,(b\,c - a\,d)\,i\,n^2\,PolyLog\left[3, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,g}$$

Result (type 4, 1354 leaves):

$$\frac{1}{3\,b^2\,g}\,i\,\left(3\,b\,d\,x\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 + \right.$$

$$3\,(b\,c - a\,d)\,Log[a + b\,x]\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 -$$

$$3\,B\,n\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\left(a\,d\,Log\left[\frac{a}{b} + x\right]^2 - 2\,a\,d\,Log\left[\frac{a}{b} + x\right]\right.$$

$$\left(1 + Log[a + b\,x]\right) + 2\,\left(-b\,c + a\,d + Log\left[\frac{c}{d} + x\right]\,\left(b\,c + a\,d\,Log[a + b\,x] - a\,d\,Log\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) + \right.$$

$$\left.\left(-b\,d\,x + a\,d\,Log[a + b\,x]\right)\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right) - 2\,a\,d\,PolyLog\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right) +$$

$$3\,b\,B\,c\,n\,\left(A + B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(Log\left[\frac{a}{b} + x\right]^2 - 2\,Log[a + b\,x]\,\left(Log\left[\frac{a}{b} + x\right] - Log\left[\frac{c}{d} + x\right] - Log\left[\frac{a+b\,x}{c+d\,x}\right]\right) - \right.$$

$$\left.2\,\left(Log\left[\frac{c}{d} + x\right]\,Log\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + PolyLog\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right) -$$

$$B^2\,n^2\,\left(a\,d\,Log\left[\frac{a}{b} + x\right]^3 - 3\,d\,(a + b\,x)\,\left(2 - 2\,Log\left[\frac{a}{b} + x\right] + Log\left[\frac{a}{b} + x\right]^2\right) - \right.$$

$$3\,b\,(c + d\,x)\,\left(2 - 2\,Log\left[\frac{c}{d} + x\right] + Log\left[\frac{c}{d} + x\right]^2\right) -$$

$$3\,d\,(b\,x - a\,Log[a + b\,x])\,\left(-Log\left[\frac{a}{b} + x\right] + Log\left[\frac{c}{d} + x\right] + Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 +$$

$$6\,\left(a\,d + 2\,b\,d\,x - b\,d\,x\,Log\left[\frac{c}{d} + x\right] - b\,c\,Log[c + d\,x] + \right.$$

$$\text{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$(b\,c-a\,d)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-3\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-2\,b\,c+2\,a\,d-2\,d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]+a\,d\,\text{Log}\left[\frac{a}{b}+x\right]^2+\right.$$

$$2\,\text{Log}\left[\frac{c}{d}+x\right]\left(b\,(c+d\,x)-a\,d\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,a\,d\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-$$

$$3\,a\,d\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+3\,a\,d\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$b\,B^2\,c\,n^2\left(\text{Log}\left[\frac{a}{b}+x\right]^3+3\,\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+3\,\text{Log}\left[a+b\,x\right]\right.$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$3\,\text{Log}\left[\frac{a}{b}+x\right]^2\left(-\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+6\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$

$$6\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-3\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(\text{Log}\left[\frac{a}{b}+x\right]^2-2\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)-$$

$$6\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-6\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)$$

Problem 164: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^2}\,dx$$

Optimal (type 4, 261 leaves, 7 steps):

$$-\frac{2\,B^2\,i\,n^2\,(c+d\,x)}{b\,g^2\,(a+b\,x)}-\frac{2\,B\,i\,n\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b\,g^2\,(a+b\,x)}-$$

$$\frac{i\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b\,g^2\,(a+b\,x)}-\frac{d\,i\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,g^2}+$$

$$\frac{2\,B\,d\,i\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,g^2}+\frac{2\,B^2\,d\,i\,n^2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^2\,g^2}$$

Result (type 4, 1315 leaves) :

$$\frac{1}{3\,b^2\,g^2}\,i\,\Bigg(-\frac{3\,(b\,c-a\,d)\,\Big(A+B\,\text{Log}\big[e\,\big(\frac{a+b\,x}{c+d\,x}\big)^n\big]-B\,n\,\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\Big)^2}{a+b\,x}+$$

$$3\,d\,\text{Log}[a+b\,x]\,\Big(A+B\,\text{Log}\big[e\,\big(\frac{a+b\,x}{c+d\,x}\big)^n\big]-B\,n\,\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\Big)^2+$$

$$\Big(6\,b\,B\,c\,n\,\Big(-A-B\,\text{Log}\big[e\,\big(\frac{a+b\,x}{c+d\,x}\big)^n\big]+B\,n\,\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\Big)\,\Big(-d\,(a+b\,x)\,\text{Log}\big[\frac{c}{d}+x\big]+$$

$$d\,(a+b\,x)\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+(b\,c-a\,d)\,\big(1+\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\big)\Big)\Big)\Big/\big((b\,c-a\,d)\,(a+b\,x)\big)-$$

$$\Big(3\,b\,B^2\,c\,n^2\,\Big(2\,b\,c-2\,a\,d+2\,d\,(a+b\,x)\,\text{Log}[a+b\,x]+2\,(b\,c-a\,d)\,\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]+$$

$$b\,(c+d\,x)\,\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]^2-2\,d\,(a+b\,x)\,\text{Log}[c+d\,x]\Big)\Big)\Big/\big((b\,c-a\,d)\,(a+b\,x)\big)+$$

$$3\,B\,d\,n\,\Big(A+B\,\text{Log}\big[e\,\big(\frac{a+b\,x}{c+d\,x}\big)^n\big]-B\,n\,\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\Big)\,\Big(\text{Log}\big[\frac{a}{b}+x\big]^2+\frac{2\,a\,\big(1+\text{Log}\big[\frac{a}{b}+x\big]\big)}{a+b\,x}+$$

$$2\,\Big(\frac{a}{a+b\,x}+\text{Log}[a+b\,x]\Big)\,\Big(-\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{c}{d}+x\big]+\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\Big)+$$

$$\Big(2\,a\,\Big((-b\,c+a\,d)\,\text{Log}\big[\frac{c}{d}+x\big]+d\,(a+b\,x)\,\big(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\big)\Big)\Big)\Big/$$

$$\big((b\,c-a\,d)\,(a+b\,x)\big)-2\,\Big(\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+\text{PolyLog}\big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]\Big)\Big)+$$

$$B^2\,d\,n^2\,\Big(\text{Log}\big[\frac{a}{b}+x\big]^3+\frac{3\,a\,\big(2+2\,\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{a}{b}+x\big]^2\big)}{a+b\,x}+3\,\text{Log}\big[\frac{c}{d}+x\big]^2\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+$$

$$\frac{1}{a+b\,x}3\,\big(a+(a+b\,x)\,\text{Log}[a+b\,x]\big)\,\Big(-\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{c}{d}+x\big]+\text{Log}\big[\frac{a+b\,x}{c+d\,x}\big]\Big)^2-$$

$$3\,\text{Log}\big[\frac{a}{b}+x\big]^2\,\Big(\text{Log}\big[\frac{c}{d}+x\big]-\text{Log}\big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]\Big)+6\,\text{Log}\big[\frac{a}{b}+x\big]\,\text{PolyLog}\big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+$$

$$\Big(3\,a\,\Big(d\,(a+b\,x)\,\text{Log}\big[\frac{a}{b}+x\big]^2+2\,\Big((-b\,c+a\,d)\,\text{Log}\big[\frac{c}{d}+x\big]+d\,(a+b\,x)$$

$$\big(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\big)\Big)-2\,\text{Log}\big[\frac{a}{b}+x\big]\,\Big((b\,c-a\,d)\,\text{Log}\big[\frac{c}{d}+x\big]+d$$

$$(a+b\,x)\,\text{Log}\big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]\Big)-2\,d\,(a+b\,x)\,\text{PolyLog}\big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]\Big)\Big)\Big/$$

$$\big((b\,c-a\,d)\,(a+b\,x)\big)+6\,\text{Log}\big[\frac{c}{d}+x\big]\,\text{PolyLog}\big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]+$$

$$\Big(3\,a\,\Big(\text{Log}\big[\frac{c}{d}+x\big]\,\Big(b\,(c+d\,x)\,\text{Log}\big[\frac{c}{d}+x\big]-2\,d\,(a+b\,x)\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]\Big)-$$

$$2\,d\,(a+b\,x)\,\text{PolyLog}\big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]\Big)\Big)\Big/\big((b\,c-a\,d)\,(a+b\,x)\big)+$$

$$3 \left(-\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right] + \mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) \left(\mathrm{Log}\left[\frac{a}{b}+x\right]^2 + \frac{2\,a\,\left(1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{a+b\,x} + \right.$$

$$\left.\left(2\,a\,\left((-b\,c+a\,d)\,\mathrm{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x] - \mathrm{Log}[c+d\,x])\right)\right)\right/$$

$$\left((b\,c - a\,d)\,(a+b\,x)\right) - 2\left(\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \mathrm{PolyLog}\left[2,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right) -$$

$$6\,\mathrm{PolyLog}\left[3,\ \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 6\,\mathrm{PolyLog}\left[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)$$

Problem 165: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)\,\left(A + B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{\left(a\,g + b\,g\,x\right)^3}\,\mathrm{d}x$$

Optimal (type 3, 151 leaves, 3 steps):

$$-\frac{B^2\,i\,n^2\,(c+d\,x)^2}{4\,(b\,c-a\,d)\,g^3\,(a+b\,x)^2} -$$

$$\frac{B\,i\,n\,(c+d\,x)^2\,\left(A + B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)\,g^3\,(a+b\,x)^2} - \frac{i\,(c+d\,x)^2\,\left(A + B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)\,g^3\,(a+b\,x)^2}$$

Result (type 3, 582 leaves):

$$-\frac{1}{4\,b^2\,(b\,c-a\,d)\,g^3\,(a+b\,x)^2}\,i\,\left(2\,b^2\,B^2\,n^2\,(c+d\,x)^2\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,B\,d^2\,n\,(a+b\,x)^2\right.$$

$$\mathrm{Log}[a+b\,x]\,\left(2\,A + B\,n + 2\,B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + 2\,B\,(b\,c-a\,d)\,n$$

$$(a\,d + b\,(c+2\,d\,x))\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\,\left(2\,A + B\,n + 2\,B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +$$

$$(b\,c-a\,d)^2\,\left(2\,A^2 + 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,B\,n\,(2\,A+B\,n)\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + \right.$$

$$\left.2\,B^2\,n^2\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(2\,A + B\,n - 2\,B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) + 2\,d\,(b\,c-a\,d)$$

$$(a+b\,x)\,\left(2\,A^2 + 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,B\,n\,(2\,A+B\,n)\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + \right.$$

$$\left.2\,B^2\,n^2\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(2\,A + B\,n - 2\,B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) -$$

$$2\,B\,d^2\,n\,(a+b\,x)^2\,\left(2\,A + B\,n + 2\,B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,B\,n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\mathrm{Log}[c+d\,x]\right)$$

Problem 166: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g + b\,g\,x)^4}\,dx$$

Optimal (type 3, 307 leaves, 7 steps):

$$\frac{B^2\,d\,i\,n^2\,(c+d\,x)^2}{4\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^2} - \frac{2\,b\,B^2\,i\,n^2\,(c+d\,x)^3}{27\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3} +$$

$$\frac{B\,d\,i\,n\,(c+d\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^2} - \frac{2\,b\,B\,i\,n\,(c+d\,x)^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3} +$$

$$\frac{d\,i\,(c+d\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^2} - \frac{b\,i\,(c+d\,x)^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3}$$

Result (type 3, 1015 leaves):

$$\frac{1}{g^4} i \left(\left(B^2 n^2 \left(-2 b c^3 + 3 a c^2 d - 3 b c^2 d x + 6 a c d^2 x + 3 a d^3 x^2 + b d^3 x^3 \right) \, \text{Log}\left[\frac{a + b x}{c + d x} \right]^2 \right) \Big/ \right.$$

$$\left(6 \left(-b c + a d \right)^2 \left(a + b x \right)^3 \right) + \frac{B d^2 n \left(6 A + 5 B n + 6 B \left(\text{Log}\left[e \left(\frac{a+b x}{c+d x} \right)^n \right] - n \, \text{Log}\left[\frac{a+b x}{c+d x} \right] \right) \right)}{18 b^2 \left(b c - a d \right) \left(a + b x \right)} + $$

$$\left(B d^3 n \, \text{Log}\left[a + b x \right] \left(6 A + 5 B n + 6 B \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) \right) \right) \Big/$$

$$\left(18 b^2 \left(b c - a d \right)^2 \right) + \frac{1}{18 b^2 \left(b c - a d \right) \left(a + b x \right)^3}$$

$$B n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \left(-12 A b^2 c^2 + 6 a A b c d + 6 a^2 A d^2 - 4 b^2 B c^2 n + 5 a b B c d n + 5 a^2 B d^2 n - \right.$$

$$18 A b^2 c d x + 18 a A b d^2 x - 3 b^2 B c d n x + 15 a b B d^2 n x + 6 b^2 B d^2 n x^2 - 12 b^2 B c^2$$

$$\left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + 6 a b B c d \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + $$

$$6 a^2 B d^2 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) - 18 b^2 B c d x$$

$$\left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + 18 a b B d^2 x \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) \right) - $$

$$\frac{1}{27 b^2 \left(a + b x \right)^3} \left(b c - a d \right) \left(9 A^2 + 6 A B n + 2 B^2 n^2 + 18 A B \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + \right.$$

$$6 B^2 n \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + 9 B^2 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right)^2 \right) - $$

$$\frac{1}{36 b^2 \left(a + b x \right)^2} d \left(18 A^2 + 6 A B n - B^2 n^2 + 36 A B \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + \right.$$

$$6 B^2 n \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) + 18 B^2 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right)^2 \right) - $$

$$\left. \left(B d^3 n \left(6 A + 5 B n + 6 B \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \, \text{Log}\left[\frac{a + b x}{c + d x} \right] \right) \right) \, \text{Log}\left[c + d x \right] \right) \Big/ \left(18 b^2 \left(b c - a d \right)^2 \right) \right)$$

Problem 168: Result more than twice size of optimal antiderivative.

$$\int \left(a g + b g x \right)^3 \left(c i + d i x \right)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] \right)^2 dx$$

Optimal (type 4, 766 leaves, 17 steps):

$$\frac{3 B^2 (b c - a d)^5 g^3 i^2 n^2 x}{20 b^2 d^3} + \frac{B^2 (b c - a d)^2 g^3 i^2 n^2 (a + b x)^4}{60 b^3} - \frac{3 B^2 (b c - a d)^4 g^3 i^2 n^2 (c + d x)^2}{40 b d^4} +$$

$$\frac{B^2 (b c - a d)^3 g^3 i^2 n^2 (c + d x)^3}{60 d^4} - \frac{B (b c - a d)^3 g^3 i^2 n (a + b x)^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{90 b^3 d} -$$

$$\frac{B (b c - a d)^2 g^3 i^2 n (a + b x)^4 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{20 b^3} -$$

$$\frac{B (b c - a d) g^3 i^2 n (a + b x)^4 (c + d x) \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{15 b^2} +$$

$$\frac{(b c - a d)^2 g^3 i^2 (a + b x)^4 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{60 b^3} +$$

$$\frac{(b c - a d) g^3 i^2 (a + b x)^4 (c + d x) \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{15 b^2} +$$

$$\frac{g^3 i^2 (a + b x)^4 (c + d x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{6 b} +$$

$$\frac{B (b c - a d)^4 g^3 i^2 n (a + b x)^2 \left(3 A + B n + 3 B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{180 b^3 d^2} -$$

$$\frac{B (b c - a d)^5 g^3 i^2 n (a + b x) \left(6 A + 5 B n + 6 B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{180 b^3 d^3} -$$

$$\frac{B (b c - a d)^6 g^3 i^2 n \left(6 A + 11 B n + 6 B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \operatorname{Log}\left[\frac{b c - a d}{b (c+d x)}\right]}{180 b^3 d^4} -$$

$$\frac{B^2 (b c - a d)^6 g^3 i^2 n^2 \operatorname{Log}[c + d x]}{20 b^3 d^4} - \frac{B^2 (b c - a d)^6 g^3 i^2 n^2 \operatorname{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{30 b^3 d^4}$$

Result (type 4, 4611 leaves):

$$\frac{1}{360 b^3 d^4}$$

$g^3 i^2 \Big(-12 b^6 B^2 c^6 n^2 + 84 a b^5 B^2 c^5 d n^2 - 252 a^2 b^4 B^2 c^4 d^2 n^2 + 240 a^3 b^3 B^2 c^3 d^3 n^2 + 12 a^4 b^2 B^2 c^2 d^4 n^2 -$

$84 a^5 b B^2 c d^5 n^2 + 12 a^6 B^2 d^6 n^2 + 360 a^3 A^2 b^3 c^2 d^4 x - 12 A b^6 B c^5 d n x + 72 a A b^5 B c^4 d^2 n x -$
$180 a^2 A b^4 B c^3 d^3 n x + 60 a^3 A b^3 B c^2 d^4 n x + 72 a^4 A b^2 B c d^5 n x - 12 a^5 A b B d^6 n x +$
$8 b^6 B^2 c^5 d n x - 54 a b^5 B^2 c^4 d^2 n^2 x + 154 a^2 b^4 B^2 c^3 d^3 n^2 x - 194 a^3 b^3 B^2 c^2 d^4 n^2 x +$
$102 a^4 b^2 B^2 c d^5 n^2 x - 16 a^5 b B^2 d^6 n^2 x + 540 a^2 A^2 b^4 c^2 d^4 x^2 + 360 a^3 A^2 b^3 c d^5 x^2 +$
$6 A b^6 B c^4 d^2 n x^2 - 36 a A b^5 B c^3 d^3 n x^2 - 180 a^2 A b^4 B c^2 d^4 n x^2 + 204 a^3 A b^3 B c d^5 n x^2 +$
$6 a^4 A b^2 B d^6 n x^2 - 7 b^6 B^2 c^4 d^2 n^2 x^2 + 46 a b^5 B^2 c^3 d^3 n^2 x^2 - 60 a^2 b^4 B^2 c^2 d^4 n^2 x^2 +$
$10 a^3 b^3 B^2 c d^5 n^2 x^2 + 11 a^4 b^2 B^2 d^6 n^2 x^2 + 360 a A^2 b^5 c^2 d^4 x^3 + 720 a^2 A^2 b^4 c d^5 x^3 +$
$120 a^3 A^2 b^3 d^6 x^3 - 4 A b^6 B c^3 d^3 n x^3 - 156 a A b^5 B c^2 d^4 n x^3 + 84 a^2 A b^4 B c d^5 n x^3 +$
$76 a^3 A b^3 B d^6 n x^3 + 6 b^6 B^2 c^3 d^3 n^2 x^3 + 6 a b^5 B^2 c^2 d^4 n^2 x^3 - 30 a^2 b^4 B^2 c d^5 n^2 x^3 +$
$18 a^3 b^3 B^2 d^6 n^2 x^3 + 90 A^2 b^6 c^2 d^4 x^4 + 540 a A^2 b^5 c d^5 x^4 + 270 a^2 A^2 b^4 d^6 x^4 - 42 A b^6 B c^2 d^4 n x^4 -$
$36 a A b^5 B c d^5 n x^4 + 78 a^2 A b^4 B d^6 n x^4 + 6 b^6 B^2 c^2 d^4 n^2 x^4 - 12 a b^5 B^2 c d^5 n^2 x^4 + 6 a^2 b^4 B^2 d^6 n^2 x^4 +$
$144 A^2 b^6 c d^5 x^5 + 216 a A^2 b^5 d^6 x^5 - 24 A b^6 B c d^5 n x^5 + 24 a A b^5 B d^6 n x^5 + 60 A^2 b^6 d^6 x^6 -$

$12 a b^5 B^2 c^5 d n^2 \log\left[\frac{a}{b} + x\right] + 72 a^2 b^4 B^2 c^4 d^2 n^2 \log\left[\frac{a}{b} + x\right] - 180 a^3 b^3 B^2 c^3 d^3 n^2 \log\left[\frac{a}{b} + x\right] +$

$60 a^4 b^2 B^2 c^2 d^4 n^2 \log\left[\frac{a}{b} + x\right] + 72 a^5 b B^2 c d^5 n^2 \log\left[\frac{a}{b} + x\right] - 12 a^6 B^2 d^6 n^2 \log\left[\frac{a}{b} + x\right] +$

$90 a^4 b^2 B^2 c^2 d^4 n^2 \log\left[\frac{a}{b} + x\right]^2 - 36 a^5 b B^2 c d^5 n^2 \log\left[\frac{a}{b} + x\right]^2 + 6 a^6 B^2 d^6 n^2 \log\left[\frac{a}{b} + x\right]^2 +$

$12 b^6 B^2 c^6 n^2 \log\left[\frac{c}{d} + x\right] - 72 a b^5 B^2 c^5 d n^2 \log\left[\frac{c}{d} + x\right] + 180 a^2 b^4 B^2 c^4 d^2 n^2 \log\left[\frac{c}{d} + x\right] -$

$60 a^3 b^3 B^2 c^3 d^3 n^2 \log\left[\frac{c}{d} + x\right] - 72 a^4 b^2 B^2 c^2 d^4 n^2 \log\left[\frac{c}{d} + x\right] + 12 a^5 b B^2 c d^5 n^2 \log\left[\frac{c}{d} + x\right] -$

$6 b^6 B^2 c^6 n^2 \log\left[\frac{c}{d} + x\right]^2 + 36 a b^5 B^2 c^5 d n^2 \log\left[\frac{c}{d} + x\right]^2 - 90 a^2 b^4 B^2 c^4 d^2 n^2 \log\left[\frac{c}{d} + x\right]^2 +$

$120 a^3 b^3 B^2 c^3 d^3 n^2 \log\left[\frac{c}{d} + x\right]^2 + 180 a^4 A b^2 B c^2 d^4 n \log[a + b x] - 72 a^5 A b B c d^5 n \log[a + b x] +$

$12 a^6 A B d^6 n \log[a + b x] - 6 a^2 b^4 B^2 c^4 d^2 n^2 \log[a + b x] + 32 a^3 b^3 B^2 c^3 d^3 n^2 \log[a + b x] +$
$66 a^4 b^2 B^2 c^2 d^4 n^2 \log[a + b x] - 108 a^5 b B^2 c d^5 n^2 \log[a + b x] + 16 a^6 B^2 d^6 n^2 \log[a + b x] -$
$180 a^4 b^2 B^2 c^2 d^4 n^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] + 72 a^5 b B^2 c d^5 n^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] -$

$12 a^6 B^2 d^6 n^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] + 180 a^4 b^2 B^2 c^2 d^4 n^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] -$

$72 a^5 b B^2 c d^5 n^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] + 12 a^6 B^2 d^6 n^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] -$

$180 a^4 b^2 B^2 c^2 d^4 n^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] + 72 a^5 b B^2 c d^5 n^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] -$

$12 a^6 B^2 d^6 n^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] + 720 a^3 A b^3 B c^2 d^4 x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$12 b^6 B^2 c^5 d n x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 72 a b^5 B^2 c^4 d^2 n x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$180 a^2 b^4 B^2 c^3 d^3 n x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 60 a^3 b^3 B^2 c^2 d^4 n x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$72 a^4 b^2 B^2 c d^5 n x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 12 a^5 b B^2 d^6 n x \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$1080 a^2 A b^4 B c^2 d^4 x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 720 a^3 A b^3 B c d^5 x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$6 b^6 B^2 c^4 d^2 n x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 36 a b^5 B^2 c^3 d^3 n x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$180 a^2 b^4 B^2 c^2 d^4 n x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 204 a^3 b^3 B^2 c d^5 n x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$6 a^4 b^2 B^2 d^6 n x^2 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 720 a A b^5 B c^2 d^4 x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$1440 a^2 A b^4 B c d^5 x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 240 a^3 A b^3 B d^6 x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$4 b^6 B^2 c^3 d^3 n x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 156 a b^5 B^2 c^2 d^4 n x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$84 a^2 b^4 B^2 c d^5 n x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 76 a^3 b^3 B^2 d^6 n x^3 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$180 A b^6 B c^2 d^4 x^4 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 1080 a A b^5 B c d^5 x^4 \log\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$$540 \, a^2 \, A \, b^4 \, B \, d^6 \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] - 42 \, b^6 \, B^2 \, c^2 \, d^4 \, n \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] -$$

$$36 \, a \, b^5 \, B^2 \, c \, d^5 \, n \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 78 \, a^2 \, b^4 \, B^2 \, d^6 \, n \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] +$$

$$288 \, A \, b^6 \, B \, c \, d^5 \, x^5 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 432 \, a \, A \, b^5 \, B \, d^6 \, x^5 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] -$$

$$24 \, b^6 \, B^2 \, c \, d^5 \, n \, x^5 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 24 \, a \, b^5 \, B^2 \, d^6 \, n \, x^5 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] +$$

$$120 \, A \, b^6 \, B \, d^6 \, x^6 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 180 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, n \, \text{Log}[a+bx] \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] -$$

$$72 \, a^5 \, b \, B^2 \, c \, d^5 \, n \, \text{Log}[a+bx] \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 12 \, a^6 \, B^2 \, d^6 \, n \, \text{Log}[a+bx] \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] +$$

$$360 \, a^3 \, b^3 \, B^2 \, c^2 \, d^4 \, x \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 540 \, a^2 \, b^4 \, B^2 \, c^2 \, d^4 \, x^2 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$$

$$360 \, a^3 \, b^3 \, B^2 \, c \, d^5 \, x^2 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 360 \, a \, b^5 \, B^2 \, c^2 \, d^4 \, x^3 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$$

$$720 \, a^2 \, b^4 \, B^2 \, c \, d^5 \, x^3 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 120 \, a^3 \, b^3 \, B^2 \, d^6 \, x^3 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$$

$$90 \, b^6 \, B^2 \, c^2 \, d^4 \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 540 \, a \, b^5 \, B^2 \, c \, d^5 \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$$

$$270 \, a^2 \, b^4 \, B^2 \, d^6 \, x^4 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 144 \, b^6 \, B^2 \, c \, d^5 \, x^5 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$$

$$216 \, a \, b^5 \, B^2 \, d^6 \, x^5 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 60 \, b^6 \, B^2 \, d^6 \, x^6 \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$$

$$12 \, A \, b^6 \, B \, c^6 \, n \, \text{Log}[c+dx] - 72 \, a \, A \, b^5 \, B \, c^5 \, d \, n \, \text{Log}[c+dx] + 180 \, a^2 \, A \, b^4 \, B \, c^4 \, d^2 \, n \, \text{Log}[c+dx] -$$
$$240 \, a^3 \, A \, b^3 \, B \, c^3 \, d^3 \, n \, \text{Log}[c+dx] - 8 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}[c+dx] + 60 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}[c+dx] -$$
$$186 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}[c+dx] + 128 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, n^2 \, \text{Log}[c+dx] + 6 \, a^4 \, b^2 \, B^2 \, c^2 \, d^4 \, n^2 \, \text{Log}[c+dx] -$$
$$12 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] + 72 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] -$$

$$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] + 240 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] +$$

$$12 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] - 72 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] +$$

$$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] - 240 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, n^2 \, \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] +$$

$$12 \, b^6 \, B^2 \, c^6 \, n \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] - 72 \, a \, b^5 \, B^2 \, c^5 \, d \, n \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] +$$

$$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] -$$

$$240 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, n \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] + 12 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] -$$

$$72 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] + 180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] -$$

$$240 \, a^3 \, b^3 \, B^2 \, c^3 \, d^3 \, n^2 \, \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] +$$

$$12 \, b^3 \, B^2 \, c^3 \left(b^3 \, c^3 - 6 \, a \, b^2 \, c^2 \, d + 15 \, a^2 \, b \, c \, d^2 - 20 \, a^3 \, d^3\right) n^2 \, \text{PolyLog}\left[2, \frac{d(a+bx)}{-bc+ad}\right] -$$

$$12\, a^4\, B^2\, d^4 \left(15\, b^2\, c^2 - 6\, a\, b\, c\, d + a^2\, d^2\right) n^2\, \text{PolyLog}\!\left[2,\, \frac{b\,(c + d\, x)}{b\, c - a\, d}\right]\right)$$

Problem 169: Result more than twice size of optimal antiderivative.

$$\int \left(a\, g + b\, g\, x\right)^2 \left(c\, i + d\, i\, x\right)^2 \left(A + B\, \text{Log}\!\left[e\left(\frac{a + b\, x}{c + d\, x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 819 leaves, 15 steps):

$$-\frac{B^2\,(b\, c - a\, d)^4\, g^2\, i^2\, n^2\, x}{10\, b^2\, d^2} - \frac{B^2\,(b\, c - a\, d)^3\, g^2\, i^2\, n^2\,(c + d\, x)^2}{20\, b\, d^3} +$$

$$\frac{B^2\,(b\, c - a\, d)^2\, g^2\, i^2\, n^2\,(c + d\, x)^3}{30\, d^3} - \frac{B\,(b\, c - a\, d)^3\, g^2\, i^2\, n\,(a + b\, x)^2 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{30\, b^3\, d} -$$

$$\frac{B\,(b\, c - a\, d)^2\, g^2\, i^2\, n\,(a + b\, x)^3 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{15\, b^3} -$$

$$\frac{B\,(b\, c - a\, d)^3\, g^2\, i^2\, n\,(c + d\, x)^2 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{5\, b\, d^3} +$$

$$\frac{4\, B\,(b\, c - a\, d)^2\, g^2\, i^2\, n\,(c + d\, x)^3 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{15\, d^3} -$$

$$\frac{b\, B\,(b\, c - a\, d)\, g^2\, i^2\, n\,(c + d\, x)^4 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{10\, d^3} +$$

$$\frac{(b\, c - a\, d)^2\, g^2\, i^2\,(a + b\, x)^3 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{30\, b^3} +$$

$$\frac{(b\, c - a\, d)\, g^2\, i^2\,(a + b\, x)^3\,(c + d\, x) \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{10\, b^2} +$$

$$\frac{g^2\, i^2\,(a + b\, x)^3\,(c + d\, x)^2 \left(A + B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{5\, b} +$$

$$\frac{B\,(b\, c - a\, d)^4\, g^2\, i^2\, n\,(a + b\, x) \left(2\, A + B\, n + 2\, B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{30\, b^3\, d^2} +$$

$$\frac{B\,(b\, c - a\, d)^5\, g^2\, i^2\, n \left(2\, A + 3\, B\, n + 2\, B\, \text{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right) \text{Log}\!\left[\frac{b\, c - a\, d}{b\,(c + d\, x)}\right]}{30\, b^3\, d^3} +$$

$$\frac{B^2\,(b\, c - a\, d)^5\, g^2\, i^2\, n^2\, \text{Log}\!\left[\frac{a+b\,x}{c+d\,x}\right]}{30\, b^3\, d^3} + \frac{B^2\,(b\, c - a\, d)^5\, g^2\, i^2\, n^2\, \text{Log}\!\left[c + d\, x\right]}{10\, b^3\, d^3} +$$

$$\frac{B^2\,(b\, c - a\, d)^5\, g^2\, i^2\, n^2\, \text{PolyLog}\!\left[2,\, \frac{d\,(a + b\, x)}{b\,(c + d\, x)}\right]}{15\, b^3\, d^3}$$

Result (type 4, 3366 leaves):

$$\frac{1}{60\, b^3\, d^3}$$

$$g^2 i^2 \left(4 b^5 B^2 c^5 n^2 - 24 a b^4 B^2 c^4 d n^2 + 20 a^2 b^3 B^2 c^3 d^2 n^2 + 20 a^3 b^2 B^2 c^2 d^3 n^2 - 24 a^4 b B^2 c d^4 n^2 + \right.$$

$$4 a^5 B^2 d^5 n^2 + 60 a^2 A^2 b^3 c^2 d^3 x + 4 A b^5 B c^4 d n x - 20 a A b^4 B c^3 d^2 n x + 20 a^3 A b^2 B c d^4 n x -$$

$$4 a^4 A b B d^5 n x - 4 b^5 B^2 c^4 d n^2 x + 22 a b^4 B^2 c^3 d^2 n^2 x - 36 a^2 b^3 B^2 c^2 d^3 n^2 x + 22 a^3 b^2 B^2 c d^4 n^2 x -$$

$$4 a^4 b B^2 d^5 n^2 x + 60 a A^2 b^4 c^2 d^3 x^2 + 60 a^2 A^2 b^3 c d^4 x^2 - 2 A b^5 B c^3 d^2 n x^2 - 30 a A b^4 B c^2 d^3 n x^2 +$$

$$30 a^2 A b^3 B c d^4 n x^2 + 2 a^3 A b^2 B d^5 n x^2 + 3 b^5 B^2 c^3 d^2 n^2 x^2 - 3 a b^4 B^2 c^2 d^3 n^2 x^2 -$$

$$3 a^2 b^3 B^2 c d^4 n^2 x^2 + 3 a^3 b^2 B^2 d^5 n^2 x^2 + 20 A^2 b^5 c^2 d^3 x^3 + 80 a A^2 b^4 c d^4 x^3 + 20 a^2 A^2 b^3 d^5 x^3 -$$

$$12 A b^5 B c^2 d^3 n x^3 + 12 a^2 A b^3 B d^5 n x^3 + 2 b^5 B^2 c^2 d^3 n^2 x^3 - 4 a b^4 B^2 c d^4 n^2 x^3 + 2 a^2 b^3 B^2 d^5 n^2 x^3 +$$

$$30 A^2 b^5 c d^4 x^4 + 30 a A^2 b^4 d^5 x^4 - 6 A b^5 B c d^4 n x^4 + 6 a A b^4 B d^5 n x^4 + 12 A^2 b^5 d^5 x^5 +$$

$$4 a b^4 B^2 c^4 d n^2 \log\left[\frac{a}{b} + x\right] - 20 a^2 b^3 B^2 c^3 d^2 n^2 \log\left[\frac{a}{b} + x\right] + 20 a^4 b B^2 c d^4 n^2 \log\left[\frac{a}{b} + x\right] -$$

$$4 a^5 B^2 d^5 n^2 \log\left[\frac{a}{b} + x\right] + 20 a^3 b^2 B^2 c^2 d^3 n^2 \log\left[\frac{a}{b} + x\right]^2 - 10 a^4 b B^2 c d^4 n^2 \log\left[\frac{a}{b} + x\right]^2 +$$

$$2 a^5 B^2 d^5 n^2 \log\left[\frac{a}{b} + x\right]^2 - 4 b^5 B^2 c^5 n^2 \log\left[\frac{c}{d} + x\right] + 20 a b^4 B^2 c^4 d n^2 \log\left[\frac{c}{d} + x\right] -$$

$$20 a^3 b^2 B^2 c^2 d^3 n^2 \log\left[\frac{c}{d} + x\right] + 4 a^4 b B^2 c d^4 n^2 \log\left[\frac{c}{d} + x\right] + 2 b^5 B^2 c^5 n^2 \log\left[\frac{c}{d} + x\right]^2 -$$

$$10 a b^4 B^2 c^4 d n^2 \log\left[\frac{c}{d} + x\right]^2 + 20 a^2 b^3 B^2 c^3 d^2 n^2 \log\left[\frac{c}{d} + x\right]^2 + 40 a^3 A b^2 B c^2 d^3 n \log[a + b x] -$$

$$20 a^4 A b B c d^4 n \log[a + b x] + 4 a^5 A B d^5 n \log[a + b x] + 2 a^2 b^3 B^2 c^3 d^2 n^2 \log[a + b x] +$$

$$18 a^3 b^2 B^2 c^2 d^3 n^2 \log[a + b x] - 24 a^4 b B^2 c d^4 n^2 \log[a + b x] + 4 a^5 B^2 d^5 n^2 \log[a + b x] -$$

$$40 a^3 b^2 B^2 c^2 d^3 n^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] + 20 a^4 b B^2 c d^4 n^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] -$$

$$4 a^5 B^2 d^5 n^2 \log\left[\frac{a}{b} + x\right] \log[a + b x] + 40 a^3 b^2 B^2 c^2 d^3 n^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] -$$

$$20 a^4 b B^2 c d^4 n^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] + 4 a^5 B^2 d^5 n^2 \log\left[\frac{c}{d} + x\right] \log[a + b x] -$$

$$40 a^3 b^2 B^2 c^2 d^3 n^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d(a + b x)}{-b c + a d}\right] + 20 a^4 b B^2 c d^4 n^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d(a + b x)}{-b c + a d}\right] -$$

$$4 a^5 B^2 d^5 n^2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d(a + b x)}{-b c + a d}\right] + 120 a^2 A b^3 B c^2 d^3 x \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$4 b^5 B^2 c^4 d n x \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] - 20 a b^4 B^2 c^3 d^2 n x \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$20 a^3 b^2 B^2 c d^4 n x \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] - 4 a^4 b B^2 d^5 n x \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$120 a A b^4 B c^2 d^3 x^2 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] + 120 a^2 A b^3 B c d^4 x^2 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] -$$

$$2 b^5 B^2 c^3 d^2 n x^2 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] - 30 a b^4 B^2 c^2 d^3 n x^2 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$30 a^2 b^3 B^2 c d^4 n x^2 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] + 2 a^3 b^2 B^2 d^5 n x^2 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$40 A b^5 B c^2 d^3 x^3 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] + 160 a A b^4 B c d^4 x^3 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$40 a^2 A b^3 B d^5 x^3 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] - 12 b^5 B^2 c^2 d^3 n x^3 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$12 a^2 b^3 B^2 d^5 n x^3 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] + 60 A b^5 B c d^4 x^4 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$$60 a A b^4 B d^5 x^4 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] - 6 b^5 B^2 c d^4 n x^4 \log\left[e\left(\frac{a + b x}{c + d x}\right)^n\right] +$$

$6 a b^4 B^2 d^5 n x^4 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 24 A b^5 B d^5 x^5 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] +$

$40 a^3 b^2 B^2 c^2 d^3 n \text{Log}[a+bx] \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] - 20 a^4 b B^2 c d^4 n \text{Log}[a+bx] \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] +$

$4 a^5 B^2 d^5 n \text{Log}[a+bx] \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 60 a^2 b^3 B^2 c^2 d^3 x \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$60 a b^4 B^2 c^2 d^3 x^2 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 60 a^2 b^3 B^2 c d^4 x^2 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$20 b^5 B^2 c^2 d^3 x^3 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 80 a b^4 B^2 c d^4 x^3 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$20 a^2 b^3 B^2 d^5 x^3 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 30 b^5 B^2 c d^4 x^4 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$30 a b^4 B^2 d^5 x^4 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 12 b^5 B^2 d^5 x^5 \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]^2 - 4 A b^5 B c^5 n \text{Log}[c+dx] +$

$20 a A b^4 B c^4 d n \text{Log}[c+dx] - 40 a^2 A b^3 B c^3 d^2 n \text{Log}[c+dx] + 4 b^5 B^2 c^5 n^2 \text{Log}[c+dx] -$
$24 a b^4 B^2 c^4 d n^2 \text{Log}[c+dx] + 18 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}[c+dx] + 2 a^3 b^2 B^2 c^2 d^3 n^2 \text{Log}[c+dx] +$
$4 b^5 B^2 c^5 n^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] - 20 a b^4 B^2 c^4 d n^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] +$

$40 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}[c+dx] - 4 b^5 B^2 c^5 n^2 \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] +$

$20 a b^4 B^2 c^4 d n^2 \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] - 40 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}\left[\frac{c}{d}+x\right] \text{Log}[c+dx] -$

$4 b^5 B^2 c^5 n \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] + 20 a b^4 B^2 c^4 d n \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] -$

$40 a^2 b^3 B^2 c^3 d^2 n \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] \text{Log}[c+dx] - 4 b^5 B^2 c^5 n^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] +$

$20 a b^4 B^2 c^4 d n^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] - 40 a^2 b^3 B^2 c^3 d^2 n^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right] -$

$4 b^3 B^2 c^3 \left(b^2 c^2 - 5 a b c d + 10 a^2 d^2\right) n^2 \text{PolyLog}\left[2, \frac{d(a+bx)}{-bc+ad}\right] -$

$4 a^3 B^2 d^3 \left(10 b^2 c^2 - 5 a b c d + a^2 d^2\right) n^2 \text{PolyLog}\left[2, \frac{b(c+dx)}{bc-ad}\right]\Big)$

Problem 170: Result more than twice size of optimal antiderivative.

$$\int (a\,g + b\,g\,x)\,(c\,i + d\,i\,x)^2 \left(A + B \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 635 leaves, 14 steps):

$$\frac{B^2 (b c - a d)^3 g \, i^2 n^2 x}{12 \, b^2 d} + \frac{B^2 (b c - a d)^2 g \, i^2 n^2 (c + d x)^2}{12 \, b \, d^2} -$$

$$\frac{B (b c - a d)^3 g \, i^2 n (a + b x) \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{6 \, b^3 d} -$$

$$\frac{B (b c - a d)^2 g \, i^2 n (a + b x)^2 \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{6 \, b^3} +$$

$$\frac{B (b c - a d)^2 g \, i^2 n (c + d x)^2 \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{4 \, b \, d^2} -$$

$$\frac{B (b c - a d) g \, i^2 n (c + d x)^3 \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{6 \, d^2} +$$

$$\frac{(b c - a d)^2 g \, i^2 (a + b x)^2 \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{12 \, b^3} +$$

$$\frac{(b c - a d) g \, i^2 (a + b x)^2 (c + d x) \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{6 \, b^2} +$$

$$\frac{g \, i^2 (a + b x)^2 (c + d x)^2 \left(A + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{4 \, b} -$$

$$\frac{B (b c - a d)^4 g \, i^2 n \left(A + B n + B \, \mathrm{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \mathrm{Log}\left[\frac{b c - a d}{b (c + d x)}\right]}{6 \, b^3 d^2} - \frac{B^2 (b c - a d)^4 g \, i^2 n^2 \, \mathrm{Log}\left[\frac{a+b x}{c+d x}\right]}{12 \, b^3 d^2} -$$

$$\frac{B^2 (b c - a d)^4 g \, i^2 n^2 \, \mathrm{Log}[c + d x]}{4 \, b^3 d^2} - \frac{B^2 (b c - a d)^4 g \, i^2 n^2 \, \mathrm{PolyLog}\left[2, \frac{d (a + b x)}{b (c + d x)}\right]}{6 \, b^3 d^2}$$

Result (type 4, 2518 leaves):

$$\frac{1}{12 \, b^3 d^2}$$

$g \, i^2 \left(-2 \, b^4 B^2 c^4 n^2 - 2 \, a \, b^3 B^2 c^3 d \, n^2 + 12 \, a^2 b^2 B^2 c^2 d^2 n^2 - 10 \, a^3 b \, B^2 c \, d^3 n^2 + 2 \, a^4 B^2 d^4 n^2 + 12 \, a \, A^2 b^3 c^2 \right.$

$d^2 x - 2 \, A \, b^4 B c^3 d \, n x - 4 \, a \, A \, b^3 B c^2 d^2 n x + 8 \, a^2 A \, b^2 B c \, d^3 n x - 2 \, a^3 A \, b \, B \, d^4 n x + 3 \, b^4 B^2 c^3 d \, n^2 x -$

$7 \, a \, b^3 B^2 c^2 d^2 n^2 x + 5 \, a^2 b^2 B^2 c \, d^3 n^2 x - a^3 b \, B^2 d^4 n^2 x + 6 \, A^2 b^4 c^2 d^2 x^2 + 12 \, a \, A^2 b^3 c \, d^3 x^2 -$

$5 \, A \, b^4 B c^2 d^2 n x^2 + 4 \, a \, A \, b^3 B c \, d^3 n x^2 + a^2 A \, b^2 B \, d^4 n x^2 + b^4 B^2 c^2 d^2 n^2 x^2 - 2 \, a \, b^3 B^2 c \, d^3 n^2 x^2 +$

$a^2 b^2 B^2 d^4 n^2 x^2 + 8 \, A^2 b^4 c \, d^3 x^3 + 4 \, a \, A^2 b^3 d^4 x^3 - 2 \, A \, b^4 B c \, d^3 n x^3 + 2 \, a \, A \, b^3 B \, d^4 n x^3 +$

$3 \, A^2 b^4 d^4 x^4 - 2 \, a \, b^3 B^2 c^3 d \, n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right] - 4 \, a^2 b^2 B^2 c^2 d^2 n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right] +$

$8 \, a^3 b \, B^2 c \, d^3 n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right] - 2 \, a^4 B^2 d^4 n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right] + 6 \, a^2 b^2 B^2 c^2 d^2 n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right]^2 -$

$4 \, a^3 b \, B^2 c \, d^3 n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right]^2 + a^4 B^2 d^4 n^2 \, \mathrm{Log}\left[\frac{a}{b} + x\right]^2 + 2 \, b^4 B^2 c^4 n^2 \, \mathrm{Log}\left[\frac{c}{d} + x\right] +$

$4 \, a \, b^3 B^2 c^3 d \, n^2 \, \mathrm{Log}\left[\frac{c}{d} + x\right] - 8 \, a^2 b^2 B^2 c^2 d^2 n^2 \, \mathrm{Log}\left[\frac{c}{d} + x\right] + 2 \, a^3 b \, B^2 c \, d^3 n^2 \, \mathrm{Log}\left[\frac{c}{d} + x\right] -$

$b^4 B^2 c^4 n^2 \, \mathrm{Log}\left[\frac{c}{d} + x\right]^2 + 4 \, a \, b^3 B^2 c^3 d \, n^2 \, \mathrm{Log}\left[\frac{c}{d} + x\right]^2 + 12 \, a^2 A \, b^2 B c^2 d^2 n \, \mathrm{Log}[a + b x] -$

$8 \, a^3 A \, b \, B c \, d^3 n \, \mathrm{Log}[a + b x] + 2 \, a^4 A \, B \, d^4 n \, \mathrm{Log}[a + b x] + 5 \, a^2 b^2 B^2 c^2 d^2 n^2 \, \mathrm{Log}[a + b x] -$

$6\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[a+b\,x] + a^4\,B^2\,d^4\,n^2\,\text{Log}[a+b\,x] - 12\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x] +$

$8\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x] - 2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x] +$

$12\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x] - 8\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x] +$

$2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x] - 12\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$

$8\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 2\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$

$24\,a\,A\,b^3\,B\,c^2\,d^2\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,b^4\,B^2\,c^3\,d\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$4\,a\,b^3\,B^2\,c^2\,d^2\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 8\,a^2\,b^2\,B^2\,c\,d^3\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$2\,a^3\,b\,B^2\,d^4\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 12\,A\,b^4\,B\,c^2\,d^2\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$24\,a\,A\,b^3\,B\,c\,d^3\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 5\,b^4\,B^2\,c^2\,d^2\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$4\,a\,b^3\,B^2\,c\,d^3\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + a^2\,b^2\,B^2\,d^4\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$16\,A\,b^4\,B\,c\,d^3\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 8\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$2\,b^4\,B^2\,c\,d^3\,n\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 2\,a\,b^3\,B^2\,d^4\,n\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 12\,a^2\,b^2\,B^2\,c^2\,d^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$8\,a^3\,b\,B^2\,c\,d^3\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 2\,a^4\,B^2\,d^4\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$12\,a\,b^3\,B^2\,c^2\,d^2\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 6\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$

$12\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 8\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$

$4\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 2\,A\,b^4\,B\,c^4\,n\,\text{Log}[c+d\,x] -$

$8\,a\,A\,b^3\,B\,c^3\,d\,n\,\text{Log}[c+d\,x] - 3\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x] + 2\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x] +$

$a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x] - 2\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x] +$

$8\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x] + 2\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x] -$

$8\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x] + 2\,b^4\,B^2\,c^4\,n\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\text{Log}[c+d\,x] -$

$8\,a\,b^3\,B^2\,c^3\,d\,n\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\text{Log}[c+d\,x] + 2\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] -$

$8\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 2\,b^3\,B^2\,c^3\,(b\,c-4\,a\,d)\,n^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] -$

$$2\, a^2\, B^2\, d^2\, \left(6\, b^2\, c^2 - 4\, a\, b\, c\, d + a^2\, d^2\right)\, n^2\, \text{PolyLog}\left[2,\, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)$$

Problem 171: Result more than twice size of optimal antiderivative.

$$\int (c\, i + d\, i\, x)^2\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\, dx$$

Optimal (type 4, 361 leaves, 11 steps):

$$\frac{B^2\,(b\,c - a\,d)^2\, i^2\, n^2\, x}{3\, b^2} - \frac{2\, B\,(b\,c - a\,d)^2\, i^2\, n\,(a+b\,x)\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{3\, b^3} -$$

$$\frac{B\,(b\,c - a\,d)\, i^2\, n\,(c+d\,x)^2\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{3\, b\, d} + \frac{i^2\,(c+d\,x)^3\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\, d} +$$

$$\frac{B^2\,(b\,c - a\,d)^3\, i^2\, n^2\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{3\, b^3\, d} + \frac{B^2\,(b\,c - a\,d)^3\, i^2\, n^2\, \text{Log}\,[c+d\,x]}{b^3\, d} +$$

$$\frac{2\, B\,(b\,c - a\,d)^3\, i^2\, n\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\, \text{Log}\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{3\, b^3\, d} -$$

$$\frac{2\, B^2\,(b\,c - a\,d)^3\, i^2\, n^2\, \text{PolyLog}\left[2,\, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{3\, b^3\, d}$$

Result (type 4, 1589 leaves):

$$i^2\, \left(c^2\, x\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2 +\right.$$

$$c\, d\, x^2\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2 +$$

$$\frac{1}{3}\, d^2\, x^3\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2 +$$

$$2\, B\, c^2\, n\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(x\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + \frac{(b\,c - a\,d)\,(a\,d\, \text{Log}\,[a+b\,x] - b\,c\, \text{Log}\,[c+d\,x])}{b^2\, c\, d - a\, b\, d^2}\right) +$$

$$2\, B\, d^2\, n\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\, \left(\frac{1}{3}\, x^3\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] - \frac{1}{6\, b^3\, d^3}\right.$$

$$\left.\left(b\, d\,(b\,c - a\,d)\, x\,(-2\, b\,c - 2\, a\,d + b\,d\,x) - 2\, a^3\, d^3\, \text{Log}\,[a+b\,x] + 2\, b^3\, c^3\, \text{Log}\,[c+d\,x]\right)\right) +$$

$$4\, B\, c\, d\, n\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{1}{2}\, x^2\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] - \frac{1}{2}\,(b\,c - a\,d)\, \left(\frac{x}{b\,d} + \frac{a^2\, \text{Log}\,[a+b\,x]}{b^2\,(b\,c - a\,d)} - \frac{c^2\, \text{Log}\,[c+d\,x]}{d^2\,(b\,c - a\,d)}\right)\right) +$$

$$B^2\, c^2\, n^2\, \left(x\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 - \frac{1}{b\,d}\, \left(-a\,d\, \text{Log}\left[\frac{a}{b} + x\right]^2 - b\,c\, \text{Log}\left[\frac{c}{d} + x\right]^2 + 2\, a\,d\, \text{Log}\left[\frac{a}{b} + x\right]\, \text{Log}\,[a+b\,x] - \right.\right.$$

$$2\,a\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x]+2\,a\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-$$

$$2\,a\,d\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]-2\,b\,c\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]+2\,b\,c\,\text{Log}\Big[\frac{c}{d}+x\Big]$$

$$\text{Log}[c+d\,x]+2\,b\,c\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\text{Log}[c+d\,x]+2\,b\,c\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$

$$2\,b\,c\,\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+2\,a\,d\,\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)+2\,B^2\,c\,d\,n^2$$

$$\Big(\frac{1}{2}\,x^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2-\frac{1}{2\,b^2\,d^2}\Big(-2\,d\,(-b\,c+a\,d)\,(a+b\,x)\,\Big(-1+\text{Log}\Big[\frac{a}{b}+x\Big]\Big)+a^2\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2-$$

$$2\,b\,(b\,c-a\,d)\,(c+d\,x)\,\Big(-1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big)+b^2\,c^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^2-2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]-\text{Log}\Big[\frac{c}{d}+x\Big]-$$

$$\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\,\Big(a^2\,d^2\,\text{Log}[a+b\,x]-b\,\big(d\,(-b\,c+a\,d)\,x+b\,c^2\,\text{Log}[c+d\,x]\big)\Big)-$$

$$2\,b^2\,c^2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)-$$

$$2\,a^2\,d^2\,\Big(\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)\Big)+$$

$$B^2\,d^2\,n^2\,\Big(\frac{1}{3}\,x^3\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2-\frac{1}{6\,b^3\,d^3}\Big(4\,d\,(-b\,c+a\,d)\,(b\,c+a\,d)\,(a+b\,x)\,\Big(-1+\text{Log}\Big[\frac{a}{b}+x\Big]\Big)-$$

$$2\,a^3\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2+4\,b\,(b\,c-a\,d)\,(b\,c+a\,d)\,(c+d\,x)\,\Big(-1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big)-$$

$$2\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2+d^2\,(b\,c-a\,d)\,\Big(b\,x\,(2\,a-b\,x)+2\,b^2\,x^2\,\text{Log}\Big[\frac{a}{b}+x\Big]-2\,a^2\,\text{Log}[a+b\,x]\Big)+$$

$$b^2\,(b\,c-a\,d)\,\Big(d\,x\,(-2\,c+d\,x)-2\,d^2\,x^2\,\text{Log}\Big[\frac{c}{d}+x\Big]+2\,c^2\,\text{Log}[c+d\,x]\Big)-$$

$$2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]-\text{Log}\Big[\frac{c}{d}+x\Big]-\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)$$

$$\big(b\,d\,(b\,c-a\,d)\,x\,(-2\,b\,c-2\,a\,d+b\,d\,x)-2\,a^3\,d^3\,\text{Log}[a+b\,x]+2\,b^3\,c^3\,\text{Log}[c+d\,x]\big)+$$

$$4\,b^3\,c^3\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)+$$

$$4\,a^3\,d^3\,\Big(\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)\Big)\Big)$$

Problem 172: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)^2\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{a\,g+b\,g\,x}\,\mathbb{d}x$$

Optimal (type 4, 572 leaves, 15 steps):

$$-\frac{B\,d\,(b\,c-a\,d)\,i^2\,n\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^3\,g}+$$

$$\frac{d\,(b\,c-a\,d)\,i^2\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^3\,g}+\frac{i^2\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,b\,g}+$$

$$\frac{2\,B\,(b\,c-a\,d)^2\,i^2\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{b^3\,g}+\frac{B^2\,(b\,c-a\,d)^2\,i^2\,n^2\,\text{Log}[c+d\,x]}{b^3\,g}+$$

$$\frac{B\,(b\,c-a\,d)^2\,i^2\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g}-$$

$$\frac{(b\,c-a\,d)^2\,i^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g}+$$

$$\frac{2\,B^2\,(b\,c-a\,d)^2\,i^2\,n^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b^3\,g}-\frac{B^2\,(b\,c-a\,d)^2\,i^2\,n^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g}+$$

$$\frac{2\,B\,(b\,c-a\,d)^2\,i^2\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g}+$$

$$\frac{2\,B^2\,(b\,c-a\,d)^2\,i^2\,n^2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g}$$

Result (type 4, 2784 leaves):

$$\frac{1}{12\,b^3\,g}\,i^2\,\left(12\,b\,d\,(2\,b\,c-a\,d)\,x\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+\right.$$

$$6\,b^2\,d^2\,x^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$12\,(b\,c-a\,d)^2\,\text{Log}[a+b\,x]\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2-$$

$$24\,b\,B\,c\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\left(a\,d\,\text{Log}\left[\frac{a}{b}+x\right]^2-2\,a\,d\,\text{Log}\left[\frac{a}{b}+x\right]\right.$$

$$(1+\text{Log}[a+b\,x])+2\,\left(-b\,c+a\,d+\text{Log}\left[\frac{c}{d}+x\right]\,\left(b\,c+a\,d\,\text{Log}[a+b\,x]-a\,d\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\right.$$

$$\left.\left(-b\,d\,x+a\,d\,\text{Log}[a+b\,x]\right)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-2\,a\,d\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$12\,b^2\,B\,c^2\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(\text{Log}\left[\frac{a}{b}+x\right]^2-2\,\text{Log}[a+b\,x]\,\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\right.$$

$$2\,\left(\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$6\,B\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-4\,a\,d^2\,(a+b\,x)\,\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)+2\,a^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]^2+4\,a\,b\,d\,(c+d\,x)\,\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)+\right.$$

$$d^2\left(b\,x\,(2\,a-b\,x)+2\,b^2\,x^2\,\text{Log}\left[\frac{a}{b}+x\right]-2\,a^2\,\text{Log}[a+b\,x]\right)-$$

$$2\,d^2\left(b\,x\,(-2\,a+b\,x)+2\,a^2\,\text{Log}[a+b\,x]\right)\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$b^2\left(d\,x\,(-2\,c+d\,x)-2\,d^2\,x^2\,\text{Log}\left[\frac{c}{d}+x\right]+2\,c^2\,\text{Log}[c+d\,x]\right)-$$

$$\left.4\,a^2\,d^2\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)-$$

$$8\,b\,B^2\,c\,n^2\left(a\,d\,\text{Log}\left[\frac{a}{b}+x\right]^3-3\,d\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)-\right.$$

$$3\,b\,(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)-$$

$$3\,d\,(b\,x-a\,\text{Log}[a+b\,x])\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$6\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}[c+d\,x]+\right.$$

$$\text{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$(b\,c-a\,d)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-3\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-2\,b\,c+2\,a\,d-2\,d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]+a\,d\,\text{Log}\left[\frac{a}{b}+x\right]^2+\right.$$

$$2\,\text{Log}\left[\frac{c}{d}+x\right]\left(b\,(c+d\,x)-a\,d\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,a\,d\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-$$

$$3\,a\,d\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+3\,a\,d\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$\left.\left.2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$B^2\,n^2\left(4\,a^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]^3-12\,a\,d^2\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)-\right.$$

$$3\,d^2\,(a+b\,x)\left(7\,a-b\,x+(-6\,a+2\,b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]+2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)-$$

$$12\,a\,b\,d\,(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)-$$

$$3\,b^2\,(c+d\,x)\left(7\,c-d\,x+(-6\,c+2\,d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

$$6\,d^2\,(b\,x\,(-2\,a+b\,x)+2\,a^2\,\text{Log}[a+b\,x])\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2-$$

$$6\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-4\,a\,d^2\,(a+b\,x)\,\left(-1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)+2\,a^2\,d^2\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2+4\,a\,b\,d\,(c+d\,x)\right.$$

$$\left(-1+\mathrm{Log}\left[\frac{c}{d}+x\right]\right)+d^2\,\left(b\,x\,(2\,a-b\,x)+2\,b^2\,x^2\,\mathrm{Log}\left[\frac{a}{b}+x\right]-2\,a^2\,\mathrm{Log}\,[a+b\,x]\right)+$$

$$b^2\,\left(d\,x\,(-2\,c+d\,x)-2\,d^2\,x^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]+2\,c^2\,\mathrm{Log}\,[c+d\,x]\right)-$$

$$4\,a^2\,d^2\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$6\left(2\,a\,b\,c\,d+3\,b^2\,c\,d\,x+3\,a\,b\,d^2\,x-b^2\,d^2\,x^2-2\,a\,b\,d^2\,x\,\mathrm{Log}\left[\frac{c}{d}+x\right]+b^2\,d^2\,x^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]-\right.$$

$$a^2\,d^2\,\mathrm{Log}\,[a+b\,x]-b^2\,c^2\,\mathrm{Log}\,[c+d\,x]-2\,a\,b\,c\,d\,\mathrm{Log}\,[c+d\,x]-$$

$$\mathrm{Log}\left[\frac{a}{b}+x\right]\left(b\,d\,(2\,a\,c+b\,x\,(2\,c-d\,x))-2\,d^2\,(a^2-b^2\,x^2)\,\mathrm{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.(-2\,b^2\,c^2+2\,a^2\,d^2)\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+2\,(b^2\,c^2-a^2\,d^2)\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$

$$4\,a\,d\,\left(a\,d+2\,b\,d\,x-b\,d\,x\,\mathrm{Log}\left[\frac{c}{d}+x\right]-b\,c\,\mathrm{Log}\,[c+d\,x]+\mathrm{Log}\left[\frac{a}{b}+x\right]\right.$$

$$\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\mathrm{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(b\,c-a\,d)$$

$$\left.\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,a^2\,d^2\,\left(\mathrm{Log}\left[\frac{a}{b}+x\right]^2\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]-\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\mathrm{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)+$$

$$12\,a^2\,d^2\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]^2\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-\right.$$

$$\left.2\,\mathrm{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$4\,b^2\,B^2\,c^2\,n^2\,\left(\mathrm{Log}\left[\frac{a}{b}+x\right]^3+3\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$3\,\mathrm{Log}\,[a+b\,x]\,\left(-\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$3\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2\,\left(-\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+6\,\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$

$$6\,\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-3\,\left(\mathrm{Log}\left[\frac{a}{b}+x\right]-\mathrm{Log}\left[\frac{c}{d}+x\right]-\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(\mathrm{Log}\left[\frac{a}{b}+x\right]^2-2\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)-$$

$$\left.6\,\mathrm{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-6\,\mathrm{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)$$

Problem 173: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2 \left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g + b\,g\,x)^2}\,dx$$

Optimal (type 4, 472 leaves, 11 steps):

$$-\frac{2\,B^2\,(b\,c - a\,d)\,i^2\,n^2\,(c+d\,x)}{b^2\,g^2\,(a+b\,x)} - \frac{2\,B\,(b\,c - a\,d)\,i^2\,n\,(c+d\,x)\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^2\,g^2\,(a+b\,x)} +$$

$$\frac{d^2\,i^2\,(a+b\,x)\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^3\,g^2} - \frac{(b\,c - a\,d)\,i^2\,(c+d\,x)\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^2\,g^2\,(a+b\,x)} +$$

$$\frac{2\,B\,d\,(b\,c - a\,d)\,i^2\,n\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[\frac{b\,c - a\,d}{b\,(c+d\,x)}\right]}{b^3\,g^2} -$$

$$\frac{2\,d\,(b\,c - a\,d)\,i^2\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\text{Log}\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g^2} +$$

$$\frac{2\,B^2\,d\,(b\,c - a\,d)\,i^2\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b^3\,g^2} +$$

$$\frac{4\,B\,d\,(b\,c - a\,d)\,i^2\,n\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g^2} +$$

$$\frac{4\,B^2\,d\,(b\,c - a\,d)\,i^2\,n^2\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\,g^2}$$

Result (type 4, 3257 leaves):

$$\frac{d^2\,i^2\,x\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{b^2\,g^2} +$$

$$\frac{2\,d\,(b\,c - a\,d)\,i^2\,\text{Log}[a+b\,x]\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{b^3\,g^2} + \frac{1}{b^3\,g^2\,(a+b\,x)}$$

$$\left(-A^2\,b^2\,c^2\,i^2 + 2\,a\,A^2\,b\,c\,d\,i^2 - a^2\,A^2\,d^2\,i^2 - 2\,A\,b^2\,B\,c^2\,i^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + \right.$$

$$4\,a\,A\,b\,B\,c\,d\,i^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - 2\,a^2\,A\,B\,d^2\,i^2$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - b^2\,B^2\,c^2\,i^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 + 2\,a\,b\,B^2$$

$$\left.c\,d\,i^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 - a^2\,B^2\,d^2\,i^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right) +$$

$$\left(B^2\,c^2\,i^2\,n^2\left(-2\,b\,c + 2\,a\,d - 2\,d\,(a+b\,x)\,\text{Log}[a+b\,x] + (-2\,b\,c + 2\,a\,d)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] - \right.\right.$$

$$\left.\left.b\,(c+d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,d\,(a+b\,x)\,\text{Log}[c+d\,x]\right)\right)\Big/\left(b\,(b\,c - a\,d)\,g^2\,(a+b\,x)\right) + \frac{1}{g^2}$$

$$2\,B\,c^2\,i^2\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\left(-\frac{\left(\frac{a}{b}+x\right)\left(\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{a}{b}+x\right]^2\right)}{(a+b\,x)^2\,\text{Log}\left[\frac{a}{b}+x\right]} - \right.$$

$$\left. \frac{\frac{b\left(\frac{c}{d}+x\right)\text{Log}\left[\frac{c}{d}+x\right]}{\left(-a+\frac{b\,c}{d}\right)^2\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)} + \frac{\text{Log}\left[1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right]}{-a+\frac{b\,c}{d}}}{b} - \frac{-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]}{b\,(a+b\,x)} + \right.$$

$$\frac{1}{g^2}2\,B\,d^2\,i^2\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2} - \frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{b^3} - \frac{a^2\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)} - \frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^2} - \right.$$

$$\left(a^2\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\left(\text{Log}[a+b\,x] - \text{Log}[c+d\,x]\right)\right)\right)\Big/$$

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right) + \frac{1}{b^3}$$

$$\left(b\,x - \frac{a^2}{a+b\,x} - 2\,a\,\text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right) +$$

$$\frac{2\,a\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^3}\right) + \frac{1}{g^2}$$

$$4\,B\,c\,d\,i^2\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^2} + \frac{a\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2\,(a+b\,x)} + \right.$$

$$\left(a\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\left(\text{Log}[a+b\,x] - \text{Log}[c+d\,x]\right)\right)\right)\Big/$$

$$\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right) + \frac{1}{b^2}$$

$$\left(\frac{a}{a+b\,x} + \text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right) -$$

$$\left. \frac{\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2}\right) +$$

$$\frac{1}{g^2}B^2\,d^2\,i^2\,n^2\left(-\frac{2\,a\,\text{Log}\left[\frac{a}{b}+x\right]^3}{3\,b^3} + \frac{(a+b\,x)\left(2 - 2\,\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3} - \right.$$

$$\frac{a^2\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3\,(a+b\,x)}+\frac{(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{b^2\,d}+\frac{1}{b^3}$$

$$\left(b\,x-\frac{a^2}{a+b\,x}-2\,a\,\text{Log}\left[a+b\,x\right]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2+$$

$$\left(a^2\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$\left.\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)+$$

$$2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2}-\right.$$

$$\frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{b^3}-\frac{a^2\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)}-\frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^2}-$$

$$\left(a^2\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\left(\text{Log}\left[a+b\,x\right]-\text{Log}\left[c+d\,x\right]\right)\right)\right)\Big/$$

$$\left.\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)+\frac{2\,a\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^3}\right)-$$

$$2\left(\frac{1}{b^3\,d}\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}\left[c+d\,x\right]+\text{Log}\left[\frac{a}{b}+x\right]\right.\right.$$

$$\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(b\,c-a\,d)$$

$$\left.\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\left(a^2\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+\right.\right.\right.$$

$$d\,(a+b\,x)\left(\text{Log}\left[a+b\,x\right]-\text{Log}\left[c+d\,x\right]\right)\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\left(\left(b\,c-a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\left.d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Big/$$

$$\left(2\,b^3\,(b\,c-a\,d)\,(a+b\,x)\right)-\frac{1}{b^3}a\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)-$$

$$\frac{1}{b^3}2\,a\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-\right.$$

$$\left.\left.2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$\frac{1}{g^2}2\,B^2\,c\,d\,i^2\,n^2\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^3}{3\,b^2}+\frac{a\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^2\,(a+b\,x)}+\frac{1}{b^2}\right.$$

$$\left(\frac{a}{a+bx} + \text{Log}[a+bx]\right) \left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+dx} + \frac{bx}{c+dx}\right]\right)^2 -$$

$$\left(a\left(-b(c+dx)\text{Log}\left[\frac{c}{d}+x\right]^2 + 2d(a+bx)\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] + \right.\right.$$

$$\left.\left.2d(a+bx)\text{PolyLog}\left[2, \frac{b(c+dx)}{bc-ad}\right]\right)\right) \Big/ \left(b^2(bc-ad)(a+bx)\right) +$$

$$2\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+dx} + \frac{bx}{c+dx}\right]\right)\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2b^2} + \frac{a\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2(a+bx)} + \right.$$

$$\left(a\left((-bc+ad)\text{Log}\left[\frac{c}{d}+x\right] + d(a+bx)\left(\text{Log}[a+bx] - \text{Log}[c+dx]\right)\right)\right) \Big/$$

$$\left.\left(b^2(bc-ad)(a+bx)\right) - \frac{\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] + \text{PolyLog}\left[2, \frac{b(c+dx)}{bc-ad}\right]}{b^2}\right) -$$

$$2\left(-\left(\left(a\left(d(a+bx)\text{Log}\left[\frac{a}{b}+x\right]^2 + 2\left((-bc+ad)\text{Log}\left[\frac{c}{d}+x\right] + d(a+bx)\right.\right.\right.\right.\right.$$

$$\left(\text{Log}[a+bx] - \text{Log}[c+dx]\right)\Big) - 2\text{Log}\left[\frac{a}{b}+x\right]\left((bc-ad)\text{Log}\left[\frac{c}{d}+x\right] + \right.$$

$$d(a+bx)\text{Log}\left[\frac{b(c+dx)}{bc-ad}\right]\Big) - 2d(a+bx)\text{PolyLog}\left[2, \frac{d(a+bx)}{-bc+ad}\right]\Big)\Big) \Big/$$

$$\left(2b^2(bc-ad)(a+bx)\right)\right) + \frac{1}{2b^2}\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right] - \text{Log}\left[\frac{b(c+dx)}{bc-ad}\right]\right) - \right.$$

$$2\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2, \frac{d(a+bx)}{-bc+ad}\right] + 2\text{PolyLog}\left[3, \frac{d(a+bx)}{-bc+ad}\right]\Big) +$$

$$\frac{1}{b^2}\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] + 2\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2, \frac{b(c+dx)}{bc-ad}\right] - \right.$$

$$2\text{PolyLog}\left[3, \frac{b(c+dx)}{bc-ad}\right]\Big)\right)$$

Problem 174: Result more than twice size of optimal antiderivative.

$$\int \frac{(ci+dix)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]\right)^2}{(ag+bgx)^3}\,dx$$

Optimal (type 4, 417 leaves, 10 steps):

$$-\frac{2 B^2 d\, i^2\, n^2\, (c+d\,x)}{b^2\, g^3\, (a+b\,x)} - \frac{B^2\, i^2\, n^2\, (c+d\,x)^2}{4\, b\, g^3\, (a+b\,x)^2} - \frac{2 B d\, i^2\, n\, (c+d\,x)\, \left(A+B\, Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^2\, g^3\, (a+b\,x)} -$$

$$\frac{B\, i^2\, n\, (c+d\,x)^2\, \left(A+B\, Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\, b\, g^3\, (a+b\,x)^2} - \frac{d\, i^2\, (c+d\,x)\, \left(A+B\, Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^2\, g^3\, (a+b\,x)} -$$

$$\frac{i^2\, (c+d\,x)^2\, \left(A+B\, Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\, b\, g^3\, (a+b\,x)^2} - \frac{d^2\, i^2\, \left(A+B\, Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\, Log\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\, g^3} +$$

$$\frac{2 B d^2\, i^2\, n\, \left(A+B\, Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\, PolyLog\left[2, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\, g^3} + \frac{2 B^2\, d^2\, i^2\, n^2\, PolyLog\left[3, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^3\, g^3}$$

Result (type 4, 4257 leaves):

$$\frac{d^2\, i^2\, Log[a+b\,x]\, \left(A+B\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{b^3\, g^3} + \frac{1}{b^3\, g^3\, (a+b\,x)}$$

$$2\left(-A^2\, b\, c\, d\, i^2 + a\, A^2\, d^2\, i^2 - 2 A\, b\, B\, c\, d\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)+2 a\, A\, B\, d^2\, i^2\right.$$

$$\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)-b\, B^2\, c\, d\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$\left.a\, B^2\, d^2\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)+\frac{1}{2\, b^3\, g^3\, (a+b\,x)^2}$$

$$\left(-A^2\, b^2\, c^2\, i^2 + 2 a\, A^2\, b\, c\, d\, i^2 - a^2\, A^2\, d^2\, i^2 - 2 A\, b^2\, B\, c^2\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)+\right.$$

$$4 a\, A\, b\, B\, c\, d\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)-2 a^2\, A\, B\, d^2\, i^2$$

$$\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)-b^2\, B^2\, c^2\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+2 a\, b\, B^2$$

$$\left.c\, d\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2-a^2\, B^2\, d^2\, i^2\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)-$$

$$\left(B^2\, c^2\, i^2\, n^2\left(b^2\, c^2 - 8 a\, b\, c\, d + 7 a^2\, d^2 - 6 b^2\, c\, d\, x + 6 a\, b\, d^2\, x - 6 d^2\, (a+b\,x)^2\, Log[a+b\,x]+\right.\right.$$

$$2\,(b\,c-a\,d)\,(b\,c-3 a\,d-2 b\,d\,x)\, Log\left[\frac{a+b\,x}{c+d\,x}\right]+2 b\,(c+d\,x)\,(b\,c-2 a\,d-b\,d\,x)\, Log\left[\frac{a+b\,x}{c+d\,x}\right]^2+$$

$$\left.\left.6 a^2\, d^2\, Log[c+d\,x]+12 a\, b\, d^2\, x\, Log[c+d\,x]+6 b^2\, d^2\, x^2\, Log[c+d\,x]\right)\right)\Big/$$

$$\left(4 b\,(b\,c-a\,d)^2\, g^3\,(a+b\,x)^2\right)+\frac{1}{g^3}2 B\, c^2\, i^2\, n\left(A+B\left(Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\, Log\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{\left(\frac{a}{b}+x\right)\left(2\, Log\left[\frac{a}{b}+x\right]+4\, Log\left[\frac{a}{b}+x\right]^2\right)}{8\,(a+b\,x)^3\, Log\left[\frac{a}{b}+x\right]}-\frac{1}{2 b}\right.$$

$$\left(\frac{b\left(\frac{c}{d}+x\right)}{\left(-a+\frac{bc}{d}\right)^3\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right)}-\left(\frac{b^2\left(\frac{c}{d}+x\right)^2}{\left(-a+\frac{bc}{d}\right)^4\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right)^2}+\frac{2b\left(\frac{c}{d}+x\right)}{\left(-a+\frac{bc}{d}\right)^3\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right)}\right)\right)\operatorname{Log}\left[\frac{c}{d}+x\right]-$$

$$\frac{\operatorname{Log}\left[1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{bc}{d}}\right]}{\left(-a+\frac{bc}{d}\right)^2}\right)-\frac{-\operatorname{Log}\left[\frac{a}{b}+x\right]+\operatorname{Log}\left[\frac{c}{d}+x\right]+\operatorname{Log}\left[\frac{a}{c+dx}+\frac{bx}{c+dx}\right]}{2b\left(a+bx\right)^2}\right)+$$

$$\frac{1}{g^3}4Bcdi^2n\left(A+B\left(\operatorname{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]-n\operatorname{Log}\left[\frac{a+bx}{c+dx}\right]\right)\right)\left(-\frac{1+\operatorname{Log}\left[\frac{a}{b}+x\right]}{b^2\left(a+bx\right)}+\right.$$

$$\frac{a\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{4b^2\left(a+bx\right)^2}-\frac{\left(-bc+ad\right)\operatorname{Log}\left[\frac{c}{d}+x\right]+d\left(a+bx\right)\left(\operatorname{Log}[a+bx]-\operatorname{Log}[c+dx]\right)}{b^2\left(bc-ad\right)\left(a+bx\right)}-$$

$$\frac{a\left(\operatorname{Log}\left[\frac{c}{d}+x\right]+\frac{d\left(a+bx\right)\left(bc-ad+d\left(a+bx\right)\operatorname{Log}[a+bx]-d\left(a+bx\right)\operatorname{Log}[c+dx]\right)}{\left(bc-ad\right)^2}\right)}{2b^2\left(a+bx\right)^2}-$$

$$\frac{\left(a+2bx\right)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right]+\operatorname{Log}\left[\frac{c}{d}+x\right]+\operatorname{Log}\left[\frac{a}{c+dx}+\frac{bx}{c+dx}\right]\right)}{2b^2\left(a+bx\right)^2}\right)+$$

$$\frac{1}{g^3}2Bd^2i^2n\left(A+B\left(\operatorname{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right]-n\operatorname{Log}\left[\frac{a+bx}{c+dx}\right]\right)\right)$$

$$\left(\frac{\operatorname{Log}\left[\frac{a}{b}+x\right]^2}{2b^3}+\frac{2a\left(1+\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\left(a+bx\right)}-\frac{a^2\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{4b^3\left(a+bx\right)^2}+\right.$$

$$\left(2a\left(\left(-bc+ad\right)\operatorname{Log}\left[\frac{c}{d}+x\right]+d\left(a+bx\right)\left(\operatorname{Log}[a+bx]-\operatorname{Log}[c+dx]\right)\right)\right)\Big/$$

$$\left(b^3\left(bc-ad\right)\left(a+bx\right)\right)+\frac{a^2\left(\operatorname{Log}\left[\frac{c}{d}+x\right]+\frac{d\left(a+bx\right)\left(bc-ad+d\left(a+bx\right)\operatorname{Log}[a+bx]-d\left(a+bx\right)\operatorname{Log}[c+dx]\right)}{\left(bc-ad\right)^2}\right)}{2b^3\left(a+bx\right)^2}+$$

$$\frac{1}{2b^3}\left(\frac{a\left(3a+4bx\right)}{\left(a+bx\right)^2}+2\operatorname{Log}[a+bx]\right)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right]+\operatorname{Log}\left[\frac{c}{d}+x\right]+\operatorname{Log}\left[\frac{a}{c+dx}+\frac{bx}{c+dx}\right]\right)-$$

$$\frac{\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}\left[\frac{d\left(a+bx\right)}{-bc+ad}\right]+\operatorname{PolyLog}\left[2,\frac{b\left(c+dx\right)}{bc-ad}\right]}{b^3}\right)+$$

$$\frac{1}{g^3}2B^2cdi^2n^2\left(-\frac{2+2\operatorname{Log}\left[\frac{a}{b}+x\right]+\operatorname{Log}\left[\frac{a}{b}+x\right]^2}{b^2\left(a+bx\right)}+\frac{a\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]+2\operatorname{Log}\left[\frac{a}{b}+x\right]^2\right)}{4b^2\left(a+bx\right)^2}+\right.$$

$$2\left(-\frac{1+\operatorname{Log}\left[\frac{a}{b}+x\right]}{b^2\left(a+bx\right)}+\frac{a\left(1+2\operatorname{Log}\left[\frac{a}{b}+x\right]\right)}{4b^2\left(a+bx\right)^2}-\left(\left(-bc+ad\right)\operatorname{Log}\left[\frac{c}{d}+x\right]+\right.\right.$$

$$d\,(a+b\,x)\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\Big/\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right)-$$

$$\frac{a\,\left(\text{Log}\left[\frac{c}{d}+x\right]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^2\,(a+b\,x)^2}\right)$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)-$$

$$\frac{(a+2\,b\,x)\,\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2}{2\,b^2\,(a+b\,x)^2}-$$

$$2\,\left(\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+\right.\right.\right.$$

$$\left.\left.d\,x])\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\,\left((b\,c-a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Big/\left(2\,b^2\,(b\,c-a\,d)\,(a+b\,x)\right)+$$

$$\left(a\,\left(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)\,\text{Log}\left[\frac{c}{d}+x\right]+d^2\,(a+b\,x)^2\right.\right.$$

$$\text{Log}[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x]+d\,(a+b\,x)\,\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+\right.$$

$$2\,(b\,c-a\,d)\,\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)-2\,d\,(a+b\,x)\,\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\right.$$

$$\left.\left.\left.\left.\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right)\right)\Big/\left(4\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)\right)+$$

$$\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Big/\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right)+$$

$$\left(a\,\left(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\text{Log}\left[\frac{c}{d}+x\right]^2-2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\,\left(b\,(c+d\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\left.\left.2\,d^2\,(a+b\,x)^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left(2\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)\right)+$$

$$\frac{1}{g^3}\,B^2\,d^2\,i^2\,n^2\,\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^3}{3\,b^3}+\frac{2\,a\,\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3\,(a+b\,x)}-\right.$$

$$\left.\frac{a^2\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^3\,(a+b\,x)^2}+\frac{1}{2\,b^3}\right.$$

$$\left(\frac{a\,(3\,a+4\,b\,x)}{(a+b\,x)^2}+2\,\text{Log}\,[a+b\,x]\right)\,\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2-$$

$$\left(2\,a\,\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$\left.\left. 2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)-$$

$$\left(a^2\,\left(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\text{Log}\left[\frac{c}{d}+x\right]^2-2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\,\left(b\,(c+d\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\left.\left.2\,d^2\,(a+b\,x)^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/$$

$$\left(2\,b^3\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)+2\,\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^3}+\frac{2\,a\,\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)}-\frac{a^2\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^3\,(a+b\,x)^2}+\right.$$

$$\left(2\,a\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}\,[a+b\,x]-\text{Log}\,[c+d\,x])\right)\right)\Big/\left(b^3\,(b\,c-a\,d)\right.$$

$$\left.(a+b\,x)\right)+\frac{a^2\,\left(\text{Log}\left[\frac{c}{d}+x\right]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}\,[a+b\,x]-d\,(a+b\,x)\,\text{Log}\,[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^3\,(a+b\,x)^2}-$$

$$\left.\frac{\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}\right)-$$

$$2\,\left(-\left(\left(a\,\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\right.\right.\right.\right.\right.$$

$$\left(\text{Log}\,[a+b\,x]-\text{Log}\,[c+d\,x]\right)\Big)-2\,\text{Log}\left[\frac{a}{b}+x\right]\,\left((b\,c-a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\left.\left.\left.d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Big/$$

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)\right)-\left(a^2\,\left(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2\right.\right.$$

$$\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)\,\text{Log}\left[\frac{c}{d}+x\right]+d^2\,(a+b\,x)^2\,\text{Log}\,[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}\,[c+d\,x]+$$

$$d\,(a+b\,x)\,\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\,(b\,c-a\,d)\,\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)-\right.$$

$$\left.\left.\left.2\,d\,(a+b\,x)\,\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right)\right)\Big/$$

$$\left(4\,b^3\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)+\frac{1}{2\,b^3}\left(\text{Log}\left[\frac{a}{b}+x\right]^2\,\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)-$$

$$2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + 2 \operatorname{PolyLog}\left[3, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right) +$$

$$\frac{1}{b^3}\left(\operatorname{Log}\left[\frac{c}{d} + x\right]^2 \operatorname{Log}\left[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + 2 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{PolyLog}\left[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right] -$$

$$2 \operatorname{PolyLog}\left[3, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right)\right)$$

Problem 175: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2 \left(A + B \operatorname{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g + b\,g\,x)^4}\, dx$$

Optimal (type 3, 157 leaves, 3 steps):

$$-\frac{2\,B^2\,i^2\,n^2\,(c + d\,x)^3}{27\,(b\,c - a\,d)\,g^4\,(a + b\,x)^3} -$$

$$\frac{2\,B\,i^2\,n\,(c + d\,x)^3 \left(A + B \operatorname{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c - a\,d)\,g^4\,(a + b\,x)^3} - \frac{i^2\,(c + d\,x)^3 \left(A + B \operatorname{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c - a\,d)\,g^4\,(a + b\,x)^3}$$

Result (type 3, 774 leaves):

$$-\frac{1}{27\,b^3\,(b\,c - a\,d)\,g^4\,(a + b\,x)^3}\,i^2\,\left(9\,b^3\,B^2\,n^2\,(c + d\,x)^3 \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]^2 +\right.$$

$$6\,B\,d^3\,n\,(a + b\,x)^3 \operatorname{Log}[a + b\,x] \left(3\,A + B\,n + 3\,B \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] - 3\,B\,n \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right) +$$

$$6\,B\,(b\,c - a\,d)\,n\,(a^2\,d^2 + a\,b\,d\,(c + 3\,d\,x) + b^2\,(c^2 + 3\,c\,d\,x + 3\,d^2\,x^2))$$

$$\operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right] \left(3\,A + B\,n + 3\,B \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] - 3\,B\,n \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right) +$$

$$(b\,c - a\,d)^3 \left(9\,A^2 + 6\,A\,B\,n + 2\,B^2\,n^2 + 9\,B^2 \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right]^2 - 6\,B\,n\,(3\,A + B\,n) \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right] +\right.$$

$$9\,B^2\,n^2 \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]^2 + 6\,B \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] \left(3\,A + B\,n - 3\,B\,n \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)\right) + 3\,d\,(b\,c - a\,d)^2$$

$$(a + b\,x) \left(9\,A^2 + 6\,A\,B\,n + 2\,B^2\,n^2 + 9\,B^2 \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right]^2 - 6\,B\,n\,(3\,A + B\,n) \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right] +\right.$$

$$9\,B^2\,n^2 \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]^2 + 6\,B \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] \left(3\,A + B\,n - 3\,B\,n \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)\right) + 3\,d^2\,(b\,c - a\,d)$$

$$(a + b\,x)^2 \left(9\,A^2 + 6\,A\,B\,n + 2\,B^2\,n^2 + 9\,B^2 \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right]^2 - 6\,B\,n\,(3\,A + B\,n) \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right] +\right.$$

$$9\,B^2\,n^2 \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]^2 + 6\,B \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] \left(3\,A + B\,n - 3\,B\,n \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)\right) -$$

$$6\,B\,d^3\,n\,(a + b\,x)^3 \left(3\,A + B\,n + 3\,B \operatorname{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] - 3\,B\,n \operatorname{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right) \operatorname{Log}[c + d\,x]\right)$$

Problem 176: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i + d\,i\,x)^2 \left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g + b\,g\,x)^5}\,dx$$

Optimal (type 3, 319 leaves, 7 steps):

$$\frac{2\,B^2\,d\,i^2\,n^2\,(c+d\,x)^3}{27\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^3} - \frac{b\,B^2\,i^2\,n^2\,(c+d\,x)^4}{32\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^4} +$$

$$\frac{2\,B\,d\,i^2\,n\,(c+d\,x)^3\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^3} - \frac{b\,B\,i^2\,n\,(c+d\,x)^4\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{8\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^4} +$$

$$\frac{d\,i^2\,(c+d\,x)^3\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^3} - \frac{b\,i^2\,(c+d\,x)^4\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^4}$$

Result (type 3, 982 leaves):

$$\frac{1}{864\,b^3\,(b\,c-a\,d)^2\,g^5\,(a+b\,x)^4}$$

$$i^2\left(-72\,b^3\,B^2\,n^2\,(c+d\,x)^3\,(3\,b\,c-4\,a\,d-b\,d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+12\,B\,d^3\,(b\,c-a\,d)\,n\,(a+b\,x)^3\right.$$

$$\left(12\,A+7\,B\,n+12\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)+12\,B\,d^4\,n\,(a+b\,x)^4\,\text{Log}[a+b\,x]$$

$$\left(12\,A+7\,B\,n+12\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-4\,d\,(b\,c-a\,d)^3\,(a+b\,x)$$

$$\left(144\,A^2+60\,A\,B\,n+11\,B^2\,n^2+144\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-12\,B\,n\,(24\,A+5\,B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.144\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+12\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(24\,A+5\,B\,n-24\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-$$

$$6\,d^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\left(72\,A^2+12\,A\,B\,n-5\,B^2\,n^2+72\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-\right.$$

$$12\,B\,n\,(12\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+72\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+$$

$$\left.12\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(12\,A+B\,n-12\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-$$

$$27\,(b\,c-a\,d)^4\left(8\,A^2+4\,A\,B\,n+B^2\,n^2+8\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-4\,B\,n\,(4\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.8\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+4\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(4\,A+B\,n-4\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)+$$

$$12\,B\,(b\,c-a\,d)\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\left(12\,B\,d^3\,n\,(a+b\,x)^3+6\,d^2\,(-b\,c+a\,d)\,(a+b\,x)^2\right.$$

$$\left(12\,A+B\,n+12\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-12\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$9\,(b\,c-a\,d)^3\left(4\,A+B\,n+4\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-4\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$\left.4\,d\,(b\,c-a\,d)^2\,(a+b\,x)\left(24\,A+5\,B\,n+24\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\right)-$$

$$12\,B\,d^4\,n\,(a+b\,x)^4\left(12\,A+7\,B\,n+12\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\text{Log}[c+d\,x]\right)$$

Problem 177: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^6}\,dx$$

Optimal (type 3, 493 leaves, 9 steps):

$$- \frac{2\,B^2\,d^2\,i^2\,n^2\,(c+d\,x)^3}{27\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^3} + \frac{b\,B^2\,d\,i^2\,n^2\,(c+d\,x)^4}{16\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^4} - \frac{2\,b^2\,B^2\,i^2\,n^2\,(c+d\,x)^5}{125\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^5} -$$

$$\frac{2\,B\,d^2\,i^2\,n\,(c+d\,x)^3\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^3} + \frac{b\,B\,d\,i^2\,n\,(c+d\,x)^4\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{4\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^4} -$$

$$\frac{2\,b^2\,B\,i^2\,n\,(c+d\,x)^5\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{25\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^5} - \frac{d^2\,i^2\,(c+d\,x)^3\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^3} +$$

$$\frac{b\,d\,i^2\,(c+d\,x)^4\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^4} - \frac{b^2\,i^2\,(c+d\,x)^5\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{5\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^5}$$

Result (type 3, 1107 leaves) :

$$\frac{1}{54\,000\,b^3\,(b\,c-a\,d)^3\,g^6\,(a+b\,x)^5}$$

$$i^2\left(-1800\,b^3\,B^2\,n^2\,(c+d\,x)^3\,\left(10\,a^2\,d^2+5\,a\,b\,d\,(-3\,c+d\,x)+b^2\,(6\,c^2-3\,c\,d\,x+d^2\,x^2)\right)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+\right.$$

$$30\,B\,d^3\,(b\,c-a\,d)^2\,n\,(a+b\,x)^3\left(60\,A-13\,B\,n+60\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-$$

$$60\,B\,d^4\,(b\,c-a\,d)\,n\,(a+b\,x)^4\left(60\,A+47\,B\,n+60\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-$$

$$60\,B\,d^5\,n\,(a+b\,x)^5\,\text{Log}\,[a+b\,x]\left(60\,A+47\,B\,n+60\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-$$

$$20\,d^2\,(b\,c-a\,d)^3\,(a+b\,x)^2\left(900\,A^2+60\,A\,B\,n-43\,B^2\,n^2+900\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-\right.$$

$$60\,B\,n\,(30\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+900\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+$$

$$\left.60\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(30\,A+B\,n-30\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-135\,d\,(b\,c-a\,d)^4\,(a+b\,x)$$

$$\left(200\,A^2+60\,A\,B\,n+7\,B^2\,n^2+200\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-20\,B\,n\,(20\,A+3\,B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.200\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+20\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(20\,A+3\,B\,n-20\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-432$$

$$(b\,c-a\,d)^5\left(25\,A^2+10\,A\,B\,n+2\,B^2\,n^2+25\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-10\,B\,n\,(5\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.25\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+10\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(5\,A+B\,n-5\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)+$$

$$60\,B\,(b\,c-a\,d)\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\left(30\,B\,d^3\,(b\,c-a\,d)\,n\,(a+b\,x)^3-60\,B\,d^4\,n\,(a+b\,x)^4+\right.$$

$$45\,d\,(-b\,c+a\,d)^3\,(a+b\,x)\left(20\,A+3\,B\,n+20\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-20\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$72\,(b\,c-a\,d)^4\left(5\,A+B\,n+5\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-5\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$\left.20\,d^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\left(30\,A+B\,n+30\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\right)+$$

$$\left.60\,B\,d^5\,n\,(a+b\,x)^5\left(60\,A+47\,B\,n+60\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\,\text{Log}\,[c+d\,x]\right)$$

Problem 178: Result more than twice size of optimal antiderivative.

$$\int(a\,g+b\,g\,x)^3\,(c\,i+d\,i\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,dx$$

Optimal (type 4, 1172 leaves, 22 steps):

$$\frac{5\,B^2\,(b\,c-a\,d)^6\,g^3\,i^3\,n^2\,x}{84\,b^3\,d^3}+\frac{B^2\,(b\,c-a\,d)^3\,g^3\,i^3\,n^2\,(a+b\,x)^4}{140\,b^4}-\frac{29\,B^2\,(b\,c-a\,d)^5\,g^3\,i^3\,n^2\,(c+d\,x)^2}{840\,b^2\,d^4}+$$

$$\frac{47\,B^2\,(b\,c-a\,d)^4\,g^3\,i^3\,n^2\,(c+d\,x)^3}{1260\,b\,d^4}-\frac{13\,B^2\,(b\,c-a\,d)^3\,g^3\,i^3\,n^2\,(c+d\,x)^4}{420\,d^4}+$$

$$\frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,i^3\,n^2\,(c+d\,x)^5}{105\,d^4} - \frac{B\,(b\,c-a\,d)^4\,g^3\,i^3\,n\,(a+b\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{210\,b^4\,d} -$$

$$\frac{3\,B\,(b\,c-a\,d)^3\,g^3\,i^3\,n\,(a+b\,x)^4\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{140\,b^4} -$$

$$\frac{B\,(b\,c-a\,d)^2\,g^3\,i^3\,n\,(a+b\,x)^4\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{35\,b^3} +$$

$$\frac{2\,B\,(b\,c-a\,d)^4\,g^3\,i^3\,n\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{21\,b\,d^4} -$$

$$\frac{3\,B\,(b\,c-a\,d)^3\,g^3\,i^3\,n\,(c+d\,x)^4\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{14\,d^4} +$$

$$\frac{6\,b\,B\,(b\,c-a\,d)^2\,g^3\,i^3\,n\,(c+d\,x)^5\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{35\,d^4} -$$

$$\frac{b^2\,B\,(b\,c-a\,d)\,g^3\,i^3\,n\,(c+d\,x)^6\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{21\,d^4} +$$

$$\frac{(b\,c-a\,d)^3\,g^3\,i^3\,(a+b\,x)^4\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{140\,b^4} +$$

$$\frac{(b\,c-a\,d)^2\,g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{35\,b^3} +$$

$$\frac{(b\,c-a\,d)\,g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{14\,b^2} +$$

$$\frac{g^3\,i^3\,(a+b\,x)^4\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{7\,b} +$$

$$\frac{B\,(b\,c-a\,d)^5\,g^3\,i^3\,n\,(a+b\,x)^2\,\left(3\,A+B\,n+3\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{420\,b^4\,d^2} -$$

$$\frac{B\,(b\,c-a\,d)^6\,g^3\,i^3\,n\,(a+b\,x)\,\left(6\,A+5\,B\,n+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{420\,b^4\,d^3} -$$

$$\frac{B\,(b\,c-a\,d)^7\,g^3\,i^3\,n\,\left(6\,A+11\,B\,n+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{420\,b^4\,d^4} -$$

$$\frac{B^2\,(b\,c-a\,d)^7\,g^3\,i^3\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{210\,b^4\,d^4} - \frac{11\,B^2\,(b\,c-a\,d)^7\,g^3\,i^3\,n^2\,\text{Log}[c+d\,x]}{420\,b^4\,d^4} -$$

$$\frac{B^2\,(b\,c-a\,d)^7\,g^3\,i^3\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{70\,b^4\,d^4}$$

Result (type 4, 5652 leaves) :

$$\frac{1}{2520\,b^4\,d^4}\,g^3\,i^3$$

$$\Big(-36\, b^7\, B^2\, c^7\, n^2 + 288\, a\, b^6\, B^2\, c^6\, d\, n^2 - 1008\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2 + 756\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2 + 756\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2 -$$

$$1008\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2 + 288\, a^6\, b\, B^2\, c\, d^6\, n^2 - 36\, a^7\, B^2\, d^7\, n^2 + 2520\, a^3\, A^2\, b^4\, c^3\, d^4\, x - 36\, A\, b^7\, B\, c^6\, d\, n\, x +$$

$$252\, a\, A\, b^6\, B\, c^5\, d^2\, n\, x - 756\, a^2\, A\, b^5\, B\, c^4\, d^3\, n\, x + 756\, a^4\, A\, b^3\, B\, c^2\, d^5\, n\, x - 252\, a^5\, A\, b^2\, B\, c\, d^6\, n\, x +$$

$$36\, a^6\, A\, b\, B\, d^7\, n\, x + 36\, b^7\, B^2\, c^6\, d\, n^2\, x - 270\, a\, b^6\, B^2\, c^5\, d^2\, n^2\, x + 876\, a^2\, b^5\, B^2\, c^4\, d^3\, n^2\, x -$$

$$1284\, a^3\, b^4\, B^2\, c^3\, d^4\, n^2\, x + 876\, a^4\, b^3\, B^2\, c^2\, d^5\, n^2\, x - 270\, a^5\, b^2\, B^2\, c\, d^6\, n^2\, x + 36\, a^6\, b\, B^2\, d^7\, n^2\, x +$$

$$3780\, a^2\, A^2\, b^5\, c^3\, d^4\, x^2 + 3780\, a^3\, A^2\, b^4\, c^2\, d^5\, x^2 + 18\, A\, b^7\, B\, c^5\, d^2\, n\, x^2 - 126\, a\, A\, b^6\, B\, c^4\, d^3\, n\, x^2 -$$

$$1512\, a^2\, A\, b^5\, B\, c^3\, d^4\, n\, x^2 + 1512\, a^3\, A\, b^4\, B\, c^2\, d^5\, n\, x^2 + 126\, a^4\, A\, b^3\, B\, c\, d^6\, n\, x^2 - 18\, a^5\, A\, b^2\, B\, d^7\, n\, x^2 -$$

$$27\, b^7\, B^2\, c^5\, d^2\, n^2\, x^2 + 201\, a\, b^6\, B^2\, c^4\, d^3\, n^2\, x^2 - 174\, a^2\, b^5\, B^2\, c^3\, d^4\, n^2\, x^2 - 174\, a^3\, b^4\, B^2\, c^2\, d^5\, n^2\, x^2 +$$

$$201\, a^4\, b^3\, B^2\, c\, d^6\, n^2\, x^2 - 27\, a^5\, b^2\, B^2\, d^7\, n^2\, x^2 + 2520\, a\, A^2\, b^6\, c^3\, d^4\, x^3 + 7560\, a^2\, A^2\, b^5\, c^2\, d^5\, x^3 +$$

$$2520\, a^3\, A^2\, b^4\, c\, d^6\, x^3 - 12\, A\, b^7\, B\, c^4\, d^3\, n\, x^3 - 1176\, a\, A\, b^6\, B\, c^3\, d^4\, n\, x^3 + 1176\, a^3\, A\, b^4\, B\, c\, d^6\, n\, x^3 +$$

$$12\, a^4\, A\, b^3\, B\, d^7\, n\, x^3 + 22\, b^7\, B^2\, c^4\, d^3\, n^2\, x^3 + 152\, a\, b^6\, B^2\, c^3\, d^4\, n^2\, x^3 - 348\, a^2\, b^5\, B^2\, c^2\, d^5\, n^2\, x^3 +$$

$$152\, a^3\, b^4\, B^2\, c\, d^6\, n^2\, x^3 + 22\, a^4\, b^3\, B^2\, d^7\, n^2\, x^3 + 630\, A^2\, b^7\, c^3\, d^4\, x^4 + 5670\, a\, A^2\, b^6\, c^2\, d^5\, x^4 +$$

$$5670\, a^2\, A^2\, b^5\, c\, d^6\, x^4 + 630\, a^3\, A^2\, b^4\, d^7\, x^4 - 306\, A\, b^7\, B\, c^3\, d^4\, n\, x^4 - 882\, a\, A\, b^6\, B\, c^2\, d^5\, n\, x^4 +$$

$$882\, a^2\, A\, b^5\, B\, c\, d^6\, n\, x^4 + 306\, a^3\, A\, b^4\, B\, d^7\, n\, x^4 + 60\, b^7\, B^2\, c^3\, d^4\, n^2\, x^4 - 60\, a\, b^6\, B^2\, c^2\, d^5\, n^2\, x^4 -$$

$$60\, a^2\, b^5\, B^2\, c\, d^6\, n^2\, x^4 + 60\, a^3\, b^4\, B^2\, d^7\, n^2\, x^4 + 1512\, A^2\, b^7\, c^2\, d^5\, x^5 + 4536\, a\, A^2\, b^6\, c\, d^6\, x^5 +$$

$$1512\, a^2\, A^2\, b^5\, d^7\, x^5 - 360\, A\, b^7\, B\, c^2\, d^5\, n\, x^5 + 360\, a^2\, A\, b^5\, B\, d^7\, n\, x^5 + 24\, b^7\, B^2\, c^2\, d^5\, n^2\, x^5 -$$

$$48\, a\, b^6\, B^2\, c\, d^6\, n^2\, x^5 + 24\, a^2\, b^5\, B^2\, d^7\, n^2\, x^5 + 1260\, A^2\, b^7\, c\, d^6\, x^6 + 1260\, a\, A^2\, b^6\, d^7\, x^6 -$$

$$120\, A\, b^7\, B\, c\, d^6\, n\, x^6 + 120\, a\, A\, b^6\, B\, d^7\, n\, x^6 + 360\, A^2\, b^7\, d^7\, x^7 - 36\, a\, b^6\, B^2\, c^6\, d\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big] +$$

$$252\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big] - 756\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big] + 756\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big] -$$

$$252\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big] + 36\, a^7\, B^2\, d^7\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big] + 630\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]^2 -$$

$$378\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]^2 + 126\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]^2 - 18\, a^7\, B^2\, d^7\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]^2 +$$

$$36\, b^7\, B^2\, c^7\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big] - 252\, a\, b^6\, B^2\, c^6\, d\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big] + 756\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big] -$$

$$756\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big] + 252\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big] - 36\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big] -$$

$$18\, b^7\, B^2\, c^7\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]^2 + 126\, a\, b^6\, B^2\, c^6\, d\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]^2 - 378\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]^2 +$$

$$630\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]^2 + 1260\, a^4\, A\, b^3\, B\, c^3\, d^4\, n\, \mathrm{Log}[a + b\, x] -$$

$$756\, a^5\, A\, b^2\, B\, c^2\, d^5\, n\, \mathrm{Log}[a + b\, x] + 252\, a^6\, A\, b\, B\, c\, d^6\, n\, \mathrm{Log}[a + b\, x] - 36\, a^7\, A\, B\, d^7\, n\, \mathrm{Log}[a + b\, x] -$$

$$18\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \mathrm{Log}[a + b\, x] + 114\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \mathrm{Log}[a + b\, x] +$$

$$642\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \mathrm{Log}[a + b\, x] - 990\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}[a + b\, x] + 288\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}[a + b\, x] -$$

$$36\, a^7\, B^2\, d^7\, n^2\, \mathrm{Log}[a + b\, x] - 1260\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]\, \mathrm{Log}[a + b\, x] +$$

$$756\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]\, \mathrm{Log}[a + b\, x] - 252\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]\, \mathrm{Log}[a + b\, x] +$$

$$36\, a^7\, B^2\, d^7\, n^2\, \mathrm{Log}\Big[\frac{a}{b} + x\Big]\, \mathrm{Log}[a + b\, x] + 1260\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}[a + b\, x] -$$

$$756\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}[a + b\, x] + 252\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}[a + b\, x] -$$

$$36\, a^7\, B^2\, d^7\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}[a + b\, x] - 1260\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] +$$

$$756\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] - 252\, a^6\, b\, B^2\, c\, d^6\, n^2\, \mathrm{Log}\Big[\frac{c}{d} + x\Big]\, \mathrm{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] +$$

$$36 \, a^7 \, B^2 \, d^7 \, n^2 \, \log\left[\frac{c}{d} + x\right] \log\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 5040 \, a^3 \, A \, b^4 \, B \, c^3 \, d^4 \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$36 \, b^7 \, B^2 \, c^6 \, d \, n \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 252 \, a \, b^6 \, B^2 \, c^5 \, d^2 \, n \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$756 \, a^2 \, b^5 \, B^2 \, c^4 \, d^3 \, n \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 756 \, a^4 \, b^3 \, B^2 \, c^2 \, d^5 \, n \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$252 \, a^5 \, b^2 \, B^2 \, c \, d^6 \, n \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 36 \, a^6 \, b \, B^2 \, d^7 \, n \, x \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$7560 \, a^2 \, A \, b^5 \, B \, c^3 \, d^4 \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 7560 \, a^3 \, A \, b^4 \, B \, c^2 \, d^5 \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$18 \, b^7 \, B^2 \, c^5 \, d^2 \, n \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 126 \, a \, b^6 \, B^2 \, c^4 \, d^3 \, n \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$1512 \, a^2 \, b^5 \, B^2 \, c^3 \, d^4 \, n \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 1512 \, a^3 \, b^4 \, B^2 \, c^2 \, d^5 \, n \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$126 \, a^4 \, b^3 \, B^2 \, c \, d^6 \, n \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 18 \, a^5 \, b^2 \, B^2 \, d^7 \, n \, x^2 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$5040 \, a \, A \, b^6 \, B \, c^3 \, d^4 \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 15\,120 \, a^2 \, A \, b^5 \, B \, c^2 \, d^5 \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$5040 \, a^3 \, A \, b^4 \, B \, c \, d^6 \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 12 \, b^7 \, B^2 \, c^4 \, d^3 \, n \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$1176 \, a \, b^6 \, B^2 \, c^3 \, d^4 \, n \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 1176 \, a^3 \, b^4 \, B^2 \, c \, d^6 \, n \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$12 \, a^4 \, b^3 \, B^2 \, d^7 \, n \, x^3 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 1260 \, A \, b^7 \, B \, c^3 \, d^4 \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$11\,340 \, a \, A \, b^6 \, B \, c^2 \, d^5 \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 11\,340 \, a^2 \, A \, b^5 \, B \, c \, d^6 \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$1260 \, a^3 \, A \, b^4 \, B \, d^7 \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 306 \, b^7 \, B^2 \, c^3 \, d^4 \, n \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$882 \, a \, b^6 \, B^2 \, c^2 \, d^5 \, n \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 882 \, a^2 \, b^5 \, B^2 \, c \, d^6 \, n \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$306 \, a^3 \, b^4 \, B^2 \, d^7 \, n \, x^4 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 3024 \, A \, b^7 \, B \, c^2 \, d^5 \, x^5 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$9072 \, a \, A \, b^6 \, B \, c \, d^6 \, x^5 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 3024 \, a^2 \, A \, b^5 \, B \, d^7 \, x^5 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$360 \, b^7 \, B^2 \, c^2 \, d^5 \, n \, x^5 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 360 \, a^2 \, b^5 \, B^2 \, d^7 \, n \, x^5 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$2520 \, A \, b^7 \, B \, c \, d^6 \, x^6 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 2520 \, a \, A \, b^6 \, B \, d^7 \, x^6 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$120 \, b^7 \, B^2 \, c \, d^6 \, n \, x^6 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 120 \, a \, b^6 \, B^2 \, d^7 \, n \, x^6 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$720 \, A \, b^7 \, B \, d^7 \, x^7 \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 1260 \, a^4 \, b^3 \, B^2 \, c^3 \, d^4 \, n \, \log[a+b\,x] \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$756 \, a^5 \, b^2 \, B^2 \, c^2 \, d^5 \, n \, \log[a+b\,x] \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$252 \, a^6 \, b \, B^2 \, c \, d^6 \, n \, \log[a+b\,x] \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 36 \, a^7 \, B^2 \, d^7 \, n \, \log[a+b\,x] \, \log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$

$$2520\, a^3\, b^4\, B^2\, c^3\, d^4\, x\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 3780\, a^2\, b^5\, B^2\, c^3\, d^4\, x^2\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$3780\, a^3\, b^4\, B^2\, c^2\, d^5\, x^2\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 2520\, a\, b^6\, B^2\, c^3\, d^4\, x^3\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$7560\, a^2\, b^5\, B^2\, c^2\, d^5\, x^3\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 2520\, a^3\, b^4\, B^2\, c\, d^6\, x^3\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$630\, b^7\, B^2\, c^3\, d^4\, x^4\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 5670\, a\, b^6\, B^2\, c^2\, d^5\, x^4\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$5670\, a^2\, b^5\, B^2\, c\, d^6\, x^4\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 630\, a^3\, b^4\, B^2\, d^7\, x^4\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$1512\, b^7\, B^2\, c^2\, d^5\, x^5\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 4536\, a\, b^6\, B^2\, c\, d^6\, x^5\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$1512\, a^2\, b^5\, B^2\, d^7\, x^5\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 1260\, b^7\, B^2\, c\, d^6\, x^6\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$1260\, a\, b^6\, B^2\, d^7\, x^6\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 360\, b^7\, B^2\, d^7\, x^7\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$

$$36\, A\, b^7\, B\, c^7\, n\, \text{Log}[c+d\,x] - 252\, a\, A\, b^6\, B\, c^6\, d\, n\, \text{Log}[c+d\,x] + 756\, a^2\, A\, b^5\, B\, c^5\, d^2\, n\, \text{Log}[c+d\,x] -$$
$$1260\, a^3\, A\, b^4\, B\, c^4\, d^3\, n\, \text{Log}[c+d\,x] - 36\, b^7\, B^2\, c^7\, n^2\, \text{Log}[c+d\,x] + 288\, a\, b^6\, B^2\, c^6\, d\, n^2\, \text{Log}[c+d\,x] -$$
$$990\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \text{Log}[c+d\,x] + 642\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \text{Log}[c+d\,x] +$$
$$114\, a^4\, b^3\, B^2\, c^3\, d^4\, n^2\, \text{Log}[c+d\,x] - 18\, a^5\, b^2\, B^2\, c^2\, d^5\, n^2\, \text{Log}[c+d\,x] -$$

$$36\, b^7\, B^2\, c^7\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] + 252\, a\, b^6\, B^2\, c^6\, d\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] -$$

$$756\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] + 1260\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x] +$$

$$36\, b^7\, B^2\, c^7\, n^2\, \text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] - 252\, a\, b^6\, B^2\, c^6\, d\, n^2\, \text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] +$$

$$756\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] - 1260\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x] +$$

$$36\, b^7\, B^2\, c^7\, n\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x] - 252\, a\, b^6\, B^2\, c^6\, d\, n\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x] +$$

$$756\, a^2\, b^5\, B^2\, c^5\, d^2\, n\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x] -$$

$$1260\, a^3\, b^4\, B^2\, c^4\, d^3\, n\, \text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x] + 36\, b^7\, B^2\, c^7\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] -$$

$$252\, a\, b^6\, B^2\, c^6\, d\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 756\, a^2\, b^5\, B^2\, c^5\, d^2\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] -$$

$$1260\, a^3\, b^4\, B^2\, c^4\, d^3\, n^2\, \text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] +$$

$$36\, b^4\, B^2\, c^4\left(b^3\, c^3 - 7\, a\, b^2\, c^2\, d + 21\, a^2\, b\, c\, d^2 - 35\, a^3\, d^3\right)n^2\, \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$$

$$36\, a^4\, B^2\, d^4\left(-35\, b^3\, c^3 + 21\, a\, b^2\, c^2\, d - 7\, a^2\, b\, c\, d^2 + a^3\, d^3\right)n^2\, \text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)$$

Problem 179: Result more than twice size of optimal antiderivative.

$$\int \left(a\,g + b\,g\,x\right)^2 \left(c\,i + d\,i\,x\right)^3 \left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 976 leaves, 20 steps):

$$-\frac{7\,B^2\,(b\,c-a\,d)^5\,g^2\,i^3\,n^2\,x}{180\,b^3\,d^2} - \frac{7\,B^2\,(b\,c-a\,d)^4\,g^2\,i^3\,n^2\,(c+d\,x)^2}{360\,b^2\,d^3} - \frac{B^2\,(b\,c-a\,d)^3\,g^2\,i^3\,n^2\,(c+d\,x)^3}{60\,b\,d^3} +$$

$$\frac{B^2\,(b\,c-a\,d)^2\,g^2\,i^3\,n^2\,(c+d\,x)^4}{60\,d^3} - \frac{B\,(b\,c-a\,d)^4\,g^2\,i^3\,n\,(a+b\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{60\,b^4\,d} -$$

$$\frac{B\,(b\,c-a\,d)^3\,g^2\,i^3\,n\,(a+b\,x)^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{30\,b^4} -$$

$$\frac{B\,(b\,c-a\,d)^4\,g^2\,i^3\,n\,(c+d\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{10\,b^2\,d^3} +$$

$$\frac{B\,(b\,c-a\,d)^3\,g^2\,i^3\,n\,(c+d\,x)^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{45\,b\,d^3} +$$

$$\frac{7\,B\,(b\,c-a\,d)^2\,g^2\,i^3\,n\,(c+d\,x)^4\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{60\,d^3} -$$

$$\frac{b\,B\,(b\,c-a\,d)\,g^2\,i^3\,n\,(c+d\,x)^5\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{15\,d^3} +$$

$$\frac{(b\,c-a\,d)^3\,g^2\,i^3\,(a+b\,x)^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{60\,b^4} +$$

$$\frac{(b\,c-a\,d)^2\,g^2\,i^3\,(a+b\,x)^3\,(c+d\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{20\,b^3} +$$

$$\frac{(b\,c-a\,d)\,g^2\,i^3\,(a+b\,x)^3\,(c+d\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{10\,b^2} +$$

$$\frac{g^2\,i^3\,(a+b\,x)^3\,(c+d\,x)^3\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{6\,b} +$$

$$\frac{B\,(b\,c-a\,d)^5\,g^2\,i^3\,n\,(a+b\,x)\,\left(2\,A + B\,n + 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{60\,b^4\,d^2} +$$

$$\frac{B\,(b\,c-a\,d)^6\,g^2\,i^3\,n\,\left(2\,A + 3\,B\,n + 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{60\,b^4\,d^3} +$$

$$\frac{B^2\,(b\,c-a\,d)^6\,g^2\,i^3\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{36\,b^4\,d^3} + \frac{11\,B^2\,(b\,c-a\,d)^6\,g^2\,i^3\,n^2\,\text{Log}\left[c+d\,x\right]}{180\,b^4\,d^3} +$$

$$\frac{B^2\,(b\,c-a\,d)^6\,g^2\,i^3\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{30\,b^4\,d^3}$$

Result (type 4, 4611 leaves):

$$\frac{1}{360\,b^4\,d^3}$$

$$g^2 i^3 \left(12 b^6 B^2 c^6 n^2 - 84 a b^5 B^2 c^5 d n^2 + 12 a^2 b^4 B^2 c^4 d^2 n^2 + 240 a^3 b^3 B^2 c^3 d^3 n^2 - 252 a^4 b^2 B^2 c^2 d^4 n^2 + \right.$$

$$84 a^5 b B^2 c d^5 n^2 - 12 a^6 B^2 d^6 n^2 + 360 a^2 A^2 b^4 c^3 d^3 x + 12 A b^6 B c^5 d n x - 72 a A b^5 B c^4 d^2 n x -$$
$$60 a^2 A b^4 B c^3 d^3 n x + 180 a^3 A b^3 B c^2 d^4 n x - 72 a^4 A b^2 B c d^5 n x + 12 a^5 A b B d^6 n x -$$
$$16 b^6 B^2 c^5 d n^2 x + 102 a b^5 B^2 c^4 d^2 n^2 x - 194 a^2 b^4 B^2 c^3 d^3 n^2 x + 154 a^3 b^3 B^2 c^2 d^4 n^2 x -$$
$$54 a^4 b^2 B^2 c d^5 n^2 x + 8 a^5 b B^2 d^6 n^2 x + 360 a A^2 b^5 c^3 d^3 x^2 + 540 a^2 A^2 b^4 c^2 d^4 x^2 - 6 A b^6 B c^4 d^2 n x^2 -$$
$$204 a A b^5 B c^3 d^3 n x^2 + 180 a^2 A b^4 B c^2 d^4 n x^2 + 36 a^3 A b^3 B c d^5 n x^2 - 6 a^4 A b^2 B d^6 n x^2 +$$
$$11 b^6 B^2 c^4 d^2 n^2 x^2 + 10 a b^5 B^2 c^3 d^3 n^2 x^2 - 60 a^2 b^4 B^2 c^2 d^4 n^2 x^2 + 46 a^3 b^3 B^2 c d^5 n^2 x^2 -$$
$$7 a^4 b^2 B^2 d^6 n^2 x^2 + 120 A^2 b^6 c^3 d^3 x^3 + 720 a A^2 b^5 c^2 d^4 x^3 + 360 a^2 A^2 b^4 c d^5 x^3 - 76 A b^6 B c^3 d^3 n x^3 -$$
$$84 a A b^5 B c^2 d^4 n x^3 + 156 a^2 A b^4 B c d^5 n x^3 + 4 a^3 A b^3 B d^6 n x^3 + 18 b^6 B^2 c^3 d^3 n^2 x^3 -$$
$$30 a b^5 B^2 c^2 d^4 n^2 x^3 + 6 a^2 b^4 B^2 c d^5 n^2 x^3 + 6 a^3 b^3 B^2 d^6 n^2 x^3 + 270 A^2 b^6 c^2 d^4 x^4 +$$
$$540 a A^2 b^5 c d^5 x^4 + 90 a^2 A^2 b^4 d^6 x^4 - 78 A b^6 B c^2 d^4 n x^4 + 36 a A b^5 B c d^5 n x^4 + 42 a^2 A b^4 B d^6 n x^4 +$$
$$6 b^6 B^2 c^2 d^4 n^2 x^4 - 12 a b^5 B^2 c d^5 n^2 x^4 + 6 a^2 b^4 B^2 d^6 n^2 x^4 + 216 A^2 b^6 c d^5 x^5 + 144 a A^2 b^5 d^6 x^5 -$$

$$24 A b^6 B c d^5 n x^5 + 24 a A b^5 B d^6 n x^5 + 60 A^2 b^6 d^6 x^6 + 12 a b^5 B^2 c^5 d n^2 \, \text{Log}\left[\frac{a}{b} + x\right] -$$

$$72 a^2 b^4 B^2 c^4 d^2 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] - 60 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] + 180 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] -$$

$$72 a^5 b B^2 c d^5 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] + 12 a^6 B^2 d^6 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] + 120 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}\left[\frac{a}{b} + x\right]^2 -$$

$$90 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}\left[\frac{a}{b} + x\right]^2 + 36 a^5 b B^2 c d^5 n^2 \, \text{Log}\left[\frac{a}{b} + x\right]^2 - 6 a^6 B^2 d^6 n^2 \, \text{Log}\left[\frac{a}{b} + x\right]^2 -$$

$$12 b^6 B^2 c^6 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] + 72 a b^5 B^2 c^5 d n^2 \, \text{Log}\left[\frac{c}{d} + x\right] + 60 a^2 b^4 B^2 c^4 d^2 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] -$$

$$180 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] + 72 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] - 12 a^5 b B^2 c d^5 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] +$$

$$6 b^6 B^2 c^6 n^2 \, \text{Log}\left[\frac{c}{d} + x\right]^2 - 36 a b^5 B^2 c^5 d n^2 \, \text{Log}\left[\frac{c}{d} + x\right]^2 + 90 a^2 b^4 B^2 c^4 d^2 n^2 \, \text{Log}\left[\frac{c}{d} + x\right]^2 +$$

$$240 a^3 A b^3 B c^3 d^3 n \, \text{Log}[a + b x] - 180 a^4 A b^2 B c^2 d^4 n \, \text{Log}[a + b x] +$$
$$72 a^5 A b B c d^5 n \, \text{Log}[a + b x] - 12 a^6 A B d^6 n \, \text{Log}[a + b x] + 6 a^2 b^4 B^2 c^4 d^2 n^2 \, \text{Log}[a + b x] +$$
$$128 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}[a + b x] - 186 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}[a + b x] + 60 a^5 b B^2 c d^5 n^2 \, \text{Log}[a + b x] -$$
$$8 a^6 B^2 d^6 n^2 \, \text{Log}[a + b x] - 240 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] +$$

$$180 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] - 72 a^5 b B^2 c d^5 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] +$$

$$12 a^6 B^2 d^6 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[a + b x] + 240 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] -$$

$$180 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] + 72 a^5 b B^2 c d^5 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] -$$

$$12 a^6 B^2 d^6 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[a + b x] - 240 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] +$$

$$180 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] - 72 a^5 b B^2 c d^5 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] +$$

$$12 a^6 B^2 d^6 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d(a+bx)}{-bc+ad}\right] + 720 a^2 A b^4 B c^3 d^3 x \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] +$$

$$12 b^6 B^2 c^5 d n x \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] - 72 a b^5 B^2 c^4 d^2 n x \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] -$$

$$60 a^2 b^4 B^2 c^3 d^3 n x \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] + 180 a^3 b^3 B^2 c^2 d^4 n x \, \text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^n\right] -$$

$72 a^4 b^2 B^2 c d^5 n x \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 12 a^5 b B^2 d^6 n x \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$720 a A b^5 B c^3 d^3 x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 1080 a^2 A b^4 B c^2 d^4 x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] -$

$6 b^6 B^2 c^4 d^2 n x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] - 204 a b^5 B^2 c^3 d^3 n x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$180 a^2 b^4 B^2 c^2 d^4 n x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 36 a^3 b^3 B^2 c d^5 n x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] -$

$6 a^4 b^2 B^2 d^6 n x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 240 A b^6 B c^3 d^3 x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$1440 a A b^5 B c^2 d^4 x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 720 a^2 A b^4 B c d^5 x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] -$

$76 b^6 B^2 c^3 d^3 n x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] - 84 a b^5 B^2 c^2 d^4 n x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$156 a^2 b^4 B^2 c d^5 n x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 4 a^3 b^3 B^2 d^6 n x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$540 A b^6 B c^2 d^4 x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 1080 a A b^5 B c d^5 x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$180 a^2 A b^4 B d^6 x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] - 78 b^6 B^2 c^2 d^4 n x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$36 a b^5 B^2 c d^5 n x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 42 a^2 b^4 B^2 d^6 n x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$432 A b^6 B c d^5 x^5 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 288 a A b^5 B d^6 x^5 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] -$

$24 b^6 B^2 c d^5 n x^5 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 24 a b^5 B^2 d^6 n x^5 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$120 A b^6 B d^6 x^6 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] + 240 a^3 b^3 B^2 c^3 d^3 n \, \text{Log}[a+bx] \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] -$

$180 a^4 b^2 B^2 c^2 d^4 n \, \text{Log}[a+bx] \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$72 a^5 b B^2 c d^5 n \, \text{Log}[a+bx] \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] - 12 a^6 B^2 d^6 n \, \text{Log}[a+bx] \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right] +$

$360 a^2 b^4 B^2 c^3 d^3 x \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 360 a b^5 B^2 c^3 d^3 x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$540 a^2 b^4 B^2 c^2 d^4 x^2 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 120 b^6 B^2 c^3 d^3 x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$720 a b^5 B^2 c^2 d^4 x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 360 a^2 b^4 B^2 c d^5 x^3 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$270 b^6 B^2 c^2 d^4 x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 540 a b^5 B^2 c d^5 x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$90 a^2 b^4 B^2 d^6 x^4 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 216 b^6 B^2 c d^5 x^5 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 +$

$144 a b^5 B^2 d^6 x^5 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 + 60 b^6 B^2 d^6 x^6 \, \text{Log}\left[e \left(\frac{a+bx}{c+dx}\right)^n\right]^2 -$

$12 A b^6 B c^6 n \, \text{Log}[c+dx] + 72 a A b^5 B c^5 d n \, \text{Log}[c+dx] - 180 a^2 A b^4 B c^4 d^2 n \, \text{Log}[c+dx] +$
$16 b^6 B^2 c^6 n^2 \, \text{Log}[c+dx] - 108 a b^5 B^2 c^5 d n^2 \, \text{Log}[c+dx] + 66 a^2 b^4 B^2 c^4 d^2 n^2 \, \text{Log}[c+dx] +$
$32 a^3 b^3 B^2 c^3 d^3 n^2 \, \text{Log}[c+dx] - 6 a^4 b^2 B^2 c^2 d^4 n^2 \, \text{Log}[c+dx] +$

$12 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}\left[\dfrac{a}{b} + x\right] \, \text{Log}[c + d\,x] - 72 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}\left[\dfrac{a}{b} + x\right] \, \text{Log}[c + d\,x] +$

$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}\left[\dfrac{a}{b} + x\right] \, \text{Log}[c + d\,x] - 12 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}\left[\dfrac{c}{d} + x\right] \, \text{Log}[c + d\,x] +$

$72 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}\left[\dfrac{c}{d} + x\right] \, \text{Log}[c + d\,x] - 180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}\left[\dfrac{c}{d} + x\right] \, \text{Log}[c + d\,x] -$

$12 \, b^6 \, B^2 \, c^6 \, n \, \text{Log}\left[e \left(\dfrac{a + b\,x}{c + d\,x}\right)^n\right] \, \text{Log}[c + d\,x] + 72 \, a \, b^5 \, B^2 \, c^5 \, d \, n \, \text{Log}\left[e \left(\dfrac{a + b\,x}{c + d\,x}\right)^n\right] \, \text{Log}[c + d\,x] -$

$180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n \, \text{Log}\left[e \left(\dfrac{a + b\,x}{c + d\,x}\right)^n\right] \, \text{Log}[c + d\,x] - 12 \, b^6 \, B^2 \, c^6 \, n^2 \, \text{Log}\left[\dfrac{a}{b} + x\right] \, \text{Log}\left[\dfrac{b\,(c + d\,x)}{b\,c - a\,d}\right] +$

$72 \, a \, b^5 \, B^2 \, c^5 \, d \, n^2 \, \text{Log}\left[\dfrac{a}{b} + x\right] \, \text{Log}\left[\dfrac{b\,(c + d\,x)}{b\,c - a\,d}\right] - 180 \, a^2 \, b^4 \, B^2 \, c^4 \, d^2 \, n^2 \, \text{Log}\left[\dfrac{a}{b} + x\right] \, \text{Log}\left[\dfrac{b\,(c + d\,x)}{b\,c - a\,d}\right] -$

$12 \, b^4 \, B^2 \, c^4 \, \left(b^2 \, c^2 - 6 \, a \, b \, c \, d + 15 \, a^2 \, d^2\right) \, n^2 \, \text{PolyLog}\left[2, \dfrac{d\,(a + b\,x)}{-b\,c + a\,d}\right] +$

$12 \, a^3 \, B^2 \, d^3 \, \left(-20 \, b^3 \, c^3 + 15 \, a \, b^2 \, c^2 \, d - 6 \, a^2 \, b \, c \, d^2 + a^3 \, d^3\right) \, n^2 \, \text{PolyLog}\left[2, \dfrac{b\,(c + d\,x)}{b\,c - a\,d}\right]\Bigg)$

Problem 180: Result more than twice size of optimal antiderivative.

$$\int (a\,g + b\,g\,x) \, (c\,i + d\,i\,x)^3 \left(A + B \, \text{Log}\left[e \left(\dfrac{a + b\,x}{c + d\,x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 786 leaves, 19 steps):

$$\frac{B^2 (b c - a d)^4 g\, i^3 n^2 x}{60\, b^3 d} + \frac{B^2 (b c - a d)^3 g\, i^3 n^2 (c + d x)^2}{30\, b^2 d^2} +$$

$$\frac{B^2 (b c - a d)^2 g\, i^3 n^2 (c + d x)^3}{30\, b\, d^2} - \frac{B (b c - a d)^4 g\, i^3 n (a + b x) \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{10\, b^4 d} -$$

$$\frac{B (b c - a d)^3 g\, i^3 n (a + b x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{10\, b^4} +$$

$$\frac{3 B (b c - a d)^3 g\, i^3 n (c + d x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{20\, b^2 d^2} +$$

$$\frac{B (b c - a d)^2 g\, i^3 n (c + d x)^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{30\, b\, d^2} -$$

$$\frac{B (b c - a d) g\, i^3 n (c + d x)^4 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{10\, d^2} +$$

$$\frac{(b c - a d)^3 g\, i^3 (a + b x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{20\, b^4} +$$

$$\frac{(b c - a d)^2 g\, i^3 (a + b x)^2 (c + d x) \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{10\, b^3} +$$

$$\frac{3 (b c - a d) g\, i^3 (a + b x)^2 (c + d x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{20\, b^2} +$$

$$\frac{g\, i^3 (a + b x)^2 (c + d x)^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{5\, b} -$$

$$\frac{B (b c - a d)^5 g\, i^3 n \left(A + B n + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \operatorname{Log}\left[\frac{b c - a d}{b (c + d x)}\right]}{10\, b^4 d^2} - \frac{B^2 (b c - a d)^5 g\, i^3 n^2 \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]}{12\, b^4 d^2} -$$

$$\frac{11 B^2 (b c - a d)^5 g\, i^3 n^2 \operatorname{Log}[c + d x]}{60\, b^4 d^2} - \frac{B^2 (b c - a d)^5 g\, i^3 n^2 \operatorname{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{10\, b^4 d^2}$$

Result (type 4, 3427 leaves):

$$\frac{1}{60\, b^4 d^2}$$

$$g\, i^3 \Big(-6 b^5 B^2 c^5 n^2 - 24 a b^4 B^2 c^4 d n^2 + 90 a^2 b^3 B^2 c^3 d^2 n^2 - 90 a^3 b^2 B^2 c^2 d^3 n^2 + 36 a^4 b B^2 c d^4 n^2 -$$

$$6 a^5 B^2 d^5 n^2 + 60 a A^2 b^4 c^3 d^2 x - 6 A b^5 B c^4 d n x - 30 a A b^4 B c^3 d^2 n x + 60 a^2 A b^3 B c^2 d^3 n x -$$

$$30 a^3 A b^2 B c d^4 n x + 6 a^4 A b B d^5 n x + 11 b^5 B^2 c^4 d n^2 x - 28 a b^4 B^2 c^3 d^2 n^2 x + 24 a^2 b^3 B^2 c^2 d^3 n^2 x -$$

$$8 a^3 b^2 B^2 c d^4 n^2 x + a^4 b B^2 d^5 n^2 x + 30 A^2 b^5 c^3 d^2 x^2 + 90 a A^2 b^4 c^2 d^3 x^2 - 27 A b^5 B c^3 d^2 n x^2 +$$

$$15 a A b^4 B c^2 d^3 n x^2 + 15 a^2 A b^3 B c d^4 n x^2 - 3 a^3 A b^2 B d^5 n x^2 + 8 b^5 B^2 c^3 d^2 n^2 x^2 -$$

$$18 a b^4 B^2 c^2 d^3 n^2 x^2 + 12 a^2 b^3 B^2 c d^4 n^2 x^2 - 2 a^3 b^2 B^2 d^5 n^2 x^2 + 60 A^2 b^5 c^2 d^3 x^3 +$$

$$60 a A^2 b^4 c d^4 x^3 - 22 A b^5 B c^2 d^3 n x^3 + 20 a A b^4 B c d^4 n x^3 + 2 a^2 A b^3 B d^5 n x^3 + 2 b^5 B^2 c^2 d^3 n^2 x^3 -$$

$$4 a b^4 B^2 c d^4 n^2 x^3 + 2 a^2 b^3 B^2 d^5 n^2 x^3 + 45 A^2 b^5 c d^4 x^4 + 15 a A^2 b^4 d^5 x^4 - 6 A b^5 B c d^4 n x^4 +$$

$$6 a A b^4 B d^5 n x^4 + 12 A^2 b^5 d^5 x^5 - 6 a b^4 B^2 c^4 d n^2 \operatorname{Log}\left[\frac{a}{b} + x\right] - 30 a^2 b^3 B^2 c^3 d^2 n^2 \operatorname{Log}\left[\frac{a}{b} + x\right] +$$

$60\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] - 30\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] + 6\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] +$

$30\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 30\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 15\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 -$

$3\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 6\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] + 30\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] -$

$60\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] + 30\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] - 6\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] -$

$3\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 + 15\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 + 60\,a^2\,A\,b^3\,B\,c^3\,d^2\,n\,\text{Log}\left[a+b\,x\right] -$

$60\,a^3\,A\,b^2\,B\,c^2\,d^3\,n\,\text{Log}\left[a+b\,x\right] + 30\,a^4\,A\,b\,B\,c\,d^4\,n\,\text{Log}\left[a+b\,x\right] - 6\,a^5\,A\,B\,d^5\,n\,\text{Log}\left[a+b\,x\right] +$

$27\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[a+b\,x\right] - 37\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[a+b\,x\right] + 11\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[a+b\,x\right] -$

$a^5\,B^2\,d^5\,n^2\,\text{Log}\left[a+b\,x\right] - 60\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[a+b\,x\right] +$

$60\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[a+b\,x\right] - 30\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[a+b\,x\right] +$

$6\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[a+b\,x\right] + 60\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[a+b\,x\right] -$

$60\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[a+b\,x\right] + 30\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[a+b\,x\right] -$

$6\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[a+b\,x\right] - 60\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$

$60\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 30\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$

$6\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 120\,a\,A\,b^4\,B\,c^3\,d^2\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$6\,b^5\,B^2\,c^4\,d\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 30\,a\,b^4\,B^2\,c^3\,d^2\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$60\,a^2\,b^3\,B^2\,c^2\,d^3\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 30\,a^3\,b^2\,B^2\,c\,d^4\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$6\,a^4\,b\,B^2\,d^5\,n\,x\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 60\,A\,b^5\,B\,c^3\,d^2\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$180\,a\,A\,b^4\,B\,c^2\,d^3\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 27\,b^5\,B^2\,c^3\,d^2\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$15\,a\,b^4\,B^2\,c^2\,d^3\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 15\,a^2\,b^3\,B^2\,c\,d^4\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$3\,a^3\,b^2\,B^2\,d^5\,n\,x^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 120\,A\,b^5\,B\,c^2\,d^3\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$120\,a\,A\,b^4\,B\,c\,d^4\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 22\,b^5\,B^2\,c^2\,d^3\,n\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$20\,a\,b^4\,B^2\,c\,d^4\,n\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 2\,a^2\,b^3\,B^2\,d^5\,n\,x^3\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$90\,A\,b^5\,B\,c\,d^4\,x^4\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 30\,a\,A\,b^4\,B\,d^5\,x^4\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$6\,b^5\,B^2\,c\,d^4\,n\,x^4\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 6\,a\,b^4\,B^2\,d^5\,n\,x^4\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$

$24\,A\,b^5\,B\,d^5\,x^5\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 60\,a^2\,b^3\,B^2\,c^3\,d^2\,n\,\text{Log}\left[a+b\,x\right]\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$

$$60 a^3 b^2 B^2 c^2 d^3 n \, \text{Log}[a + b\, x] \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right] + 30 a^4 b\, B^2 c\, d^4 n \, \text{Log}[a + b\, x] \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right] -$$

$$6 a^5 B^2 d^5 n \, \text{Log}[a + b\, x] \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right] + 60 a\, b^4 B^2 c^3 d^2 x \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 +$$

$$30 b^5 B^2 c^3 d^2 x^2 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 + 90 a\, b^4 B^2 c^2 d^3 x^2 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 +$$

$$60 b^5 B^2 c^2 d^3 x^3 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 + 60 a\, b^4 B^2 c\, d^4 x^3 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 +$$

$$45 b^5 B^2 c\, d^4 x^4 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 + 15 a\, b^4 B^2 d^5 x^4 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 +$$

$$12 b^5 B^2 d^5 x^5 \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]^2 + 6 A\, b^5 B\, c^5 n \, \text{Log}[c + d\, x] - 30 a\, A\, b^4 B\, c^4 d\, n \, \text{Log}[c + d\, x] -$$

$$11 b^5 B^2 c^5 n^2 \, \text{Log}[c + d\, x] + a\, b^4 B^2 c^4 d\, n^2 \, \text{Log}[c + d\, x] + 13 a^2 b^3 B^2 c^3 d^2 n^2 \, \text{Log}[c + d\, x] -$$

$$3 a^3 b^2 B^2 c^2 d^3 n^2 \, \text{Log}[c + d\, x] - 6 b^5 B^2 c^5 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d\, x] +$$

$$30 a\, b^4 B^2 c^4 d\, n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d\, x] + 6 b^5 B^2 c^5 n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d\, x] -$$

$$30 a\, b^4 B^2 c^4 d\, n^2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d\, x] + 6 b^5 B^2 c^5 n \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right] \text{Log}[c + d\, x] -$$

$$30 a\, b^4 B^2 c^4 d\, n \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right] \text{Log}[c + d\, x] + 6 b^5 B^2 c^5 n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b\,(c + d\, x)}{b\, c - a\, d}\right] -$$

$$30 a\, b^4 B^2 c^4 d\, n^2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b\,(c + d\, x)}{b\, c - a\, d}\right] + 6 b^4 B^2 c^4 \left(b\, c - 5 a\, d\right) n^2 \, \text{PolyLog}\left[2, \frac{d\,(a + b\, x)}{-b\, c + a\, d}\right] +$$

$$6 a^2 B^2 d^2 \left(-10 b^3 c^3 + 10 a\, b^2 c^2 d - 5 a^2 b\, c\, d^2 + a^3 d^3\right) n^2 \, \text{PolyLog}\left[2, \frac{b\,(c + d\, x)}{b\, c - a\, d}\right]\bigg)$$

Problem 181: Result more than twice size of optimal antiderivative.

$$\int (c\, i + d\, i\, x)^3 \left(A + B \, \text{Log}\left[e \left(\frac{a + b\, x}{c + d\, x}\right)^n\right]\right)^2 dx$$

Optimal (type 4, 454 leaves, 15 steps):

$$\frac{5\,B^2\,(b\,c-a\,d)^3\,i^3\,n^2\,x}{12\,b^3}+\frac{B^2\,(b\,c-a\,d)^2\,i^3\,n^2\,(c+d\,x)^2}{12\,b^2\,d}-$$

$$\frac{B\,(b\,c-a\,d)^3\,i^3\,n\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,b^4}-$$

$$\frac{B\,(b\,c-a\,d)^2\,i^3\,n\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{4\,b^2\,d}-$$

$$\frac{B\,(b\,c-a\,d)\,i^3\,n\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{6\,b\,d}+\frac{i^3\,(c+d\,x)^4\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,d}+$$

$$\frac{5\,B^2\,(b\,c-a\,d)^4\,i^3\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{12\,b^4\,d}+\frac{11\,B^2\,(b\,c-a\,d)^4\,i^3\,n^2\,\text{Log}\,[c+d\,x]}{12\,b^4\,d}+$$

$$\frac{B\,(b\,c-a\,d)^4\,i^3\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{2\,b^4\,d}-\frac{B^2\,(b\,c-a\,d)^4\,i^3\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{2\,b^4\,d}$$

Result (type 4, 2348 leaves) :

$$\frac{1}{12\,b^4\,d}$$

$i^3\,\Big(-18\,b^4\,B^2\,c^4\,n^2+54\,a\,b^3\,B^2\,c^3\,d\,n^2-60\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2+30\,a^3\,b\,B^2\,c\,d^3\,n^2-6\,a^4\,B^2\,d^4\,n^2+12\,A^2\,b^4\,c^3\,d$

$x-18\,A\,b^4\,B\,c^3\,d\,n\,x+36\,a\,A\,b^3\,B\,c^2\,d^2\,n\,x-24\,a^2\,A\,b^2\,B\,c\,d^3\,n\,x+6\,a^3\,A\,b\,B\,d^4\,n\,x+7\,b^4\,B^2\,c^3\,d\,n^2\,x-$
$19\,a\,b^3\,B^2\,c^2\,d^2\,n^2\,x+17\,a^2\,b^2\,B^2\,c\,d^3\,n^2\,x-5\,a^3\,b\,B^2\,d^4\,n^2\,x+18\,A^2\,b^4\,c^2\,d^2\,x^2-9\,A\,b^4\,B\,c^2\,d^2\,n\,x^2+$
$12\,a\,A\,b^3\,B\,c\,d^3\,n\,x^2-3\,a^2\,A\,b^2\,B\,d^4\,n\,x^2+b^4\,B^2\,c^2\,d^2\,n^2\,x^2-2\,a\,b^3\,B^2\,c\,d^3\,n^2\,x^2+a^2\,b^2\,B^2\,d^4\,n^2\,x^2+$
$12\,A^2\,b^4\,c\,d^3\,x^3-2\,A\,b^4\,B\,c\,d^3\,n\,x^3+2\,a\,A\,b^3\,B\,d^4\,n\,x^3+3\,A^2\,b^4\,d^4\,x^4-18\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]+$

$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]-24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]+6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]+$

$12\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2-18\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2+12\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2-$

$3\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2+18\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-36\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]+$

$24\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-6\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]+3\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+$

$24\,a\,A\,b^3\,B\,c^3\,d\,n\,\text{Log}\,[a+b\,x]-36\,a^2\,A\,b^2\,B\,c^2\,d^2\,n\,\text{Log}\,[a+b\,x]+24\,a^3\,A\,b\,B\,c\,d^3\,n\,\text{Log}\,[a+b\,x]-$
$6\,a^4\,A\,B\,d^4\,n\,\text{Log}\,[a+b\,x]+9\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\,[a+b\,x]-14\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\,[a+b\,x]+$
$5\,a^4\,B^2\,d^4\,n^2\,\text{Log}\,[a+b\,x]-24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\,[a+b\,x]+$

$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\,[a+b\,x]-24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\,[a+b\,x]+$

$6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\,[a+b\,x]+24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x]-$

$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x]+24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x]-$

$6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[a+b\,x]-24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$

$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$

$6 a^4 B^2 d^4 n^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] + 24 A b^4 B c^3 d x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$18 b^4 B^2 c^3 d n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 36 a b^3 B^2 c^2 d^2 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] -$

$24 a^2 b^2 B^2 c d^3 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 6 a^3 b B^2 d^4 n x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$36 A b^4 B c^2 d^2 x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 9 b^4 B^2 c^2 d^2 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$12 a b^3 B^2 c d^3 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 3 a^2 b^2 B^2 d^4 n x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$24 A b^4 B c d^3 x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 2 b^4 B^2 c d^3 n x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$2 a b^3 B^2 d^4 n x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + 6 A b^4 B d^4 x^4 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$24 a b^3 B^2 c^3 d n \text{Log}[a + b x] \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 36 a^2 b^2 B^2 c^2 d^2 n \text{Log}[a + b x] \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$24 a^3 b B^2 c d^3 n \text{Log}[a + b x] \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - 6 a^4 B^2 d^4 n \text{Log}[a + b x] \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] +$

$12 b^4 B^2 c^3 d x \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]^2 + 18 b^4 B^2 c^2 d^2 x^2 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]^2 +$

$12 b^4 B^2 c d^3 x^3 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]^2 + 3 b^4 B^2 d^4 x^4 \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]^2 -$

$6 A b^4 B c^4 n \text{Log}[c + d x] - 7 b^4 B^2 c^4 n^2 \text{Log}[c + d x] + 10 a b^3 B^2 c^3 d n^2 \text{Log}[c + d x] -$

$3 a^2 b^2 B^2 c^2 d^2 n^2 \text{Log}[c + d x] + 6 b^4 B^2 c^4 n^2 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}[c + d x] -$

$6 b^4 B^2 c^4 n^2 \text{Log}\left[\frac{c}{d} + x\right] \text{Log}[c + d x] - 6 b^4 B^2 c^4 n \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] \text{Log}[c + d x] -$

$6 b^4 B^2 c^4 n^2 \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b (c + d x)}{b c - a d}\right] - 6 b^4 B^2 c^4 n^2 \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] +$

$6 a B^2 d \left(-4 b^3 c^3 + 6 a b^2 c^2 d - 4 a^2 b c d^2 + a^3 d^3\right) n^2 \text{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right]\Big)$

Problem 182: Result more than twice size of optimal antiderivative.

$$\int \frac{(c i + d i x)^3 \left(A + B \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)^2}{a g + b g x} \, dx$$

Optimal (type 4, 762 leaves, 26 steps):

$$\frac{B^2 d (b c - a d)^2 i^3 n^2 x}{3 b^3 g} - \frac{5 B d (b c - a d)^2 i^3 n (a + b x) \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{3 b^4 g} -$$

$$\frac{B (b c - a d) i^3 n (c + d x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{3 b^2 g} +$$

$$\frac{d (b c - a d)^2 i^3 (a + b x) \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{b^4 g} + \frac{(b c - a d) i^3 (c + d x)^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{2 b^2 g} +$$

$$\frac{i^3 (c + d x)^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{3 b g} + \frac{2 B (b c - a d)^3 i^3 n \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \operatorname{Log}\left[\frac{b c - a d}{b (c+d x)}\right]}{b^4 g} +$$

$$\frac{B^2 (b c - a d)^3 i^3 n^2 \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]}{3 b^4 g} + \frac{2 B^2 (b c - a d)^3 i^3 n^2 \operatorname{Log}[c + d x]}{b^4 g} +$$

$$\frac{5 B (b c - a d)^3 i^3 n \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \operatorname{Log}\left[1 - \frac{b (c+d x)}{d (a+b x)}\right]}{3 b^4 g} -$$

$$\frac{(b c - a d)^3 i^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2 \operatorname{Log}\left[1 - \frac{b (c+d x)}{d (a+b x)}\right]}{b^4 g} +$$

$$\frac{2 B^2 (b c - a d)^3 i^3 n^2 \operatorname{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{b^4 g} - \frac{5 B^2 (b c - a d)^3 i^3 n^2 \operatorname{PolyLog}\left[2, \frac{b (c+d x)}{d (a+b x)}\right]}{3 b^4 g} +$$

$$\frac{2 B (b c - a d)^3 i^3 n \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right) \operatorname{PolyLog}\left[2, \frac{b (c+d x)}{d (a+b x)}\right]}{b^4 g} +$$

$$\frac{2 B^2 (b c - a d)^3 i^3 n^2 \operatorname{PolyLog}\left[3, \frac{b (c+d x)}{d (a+b x)}\right]}{b^4 g}$$

Result (type 4, 5616 leaves):

$$\frac{1}{b^3 g} d \left(3 b^2 c^2 - 3 a b c d + a^2 d^2\right) i^3 x \left(A + B \left(\operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)\right)^2 +$$

$$\frac{d^2 (3 b c - a d) i^3 x^2 \left(A + B \left(\operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)\right)^2}{2 b^2 g} +$$

$$\frac{d^3 i^3 x^3 \left(A + B \left(\operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)\right)^2}{3 b g} +$$

$$\frac{(b c - a d)^3 i^3 \operatorname{Log}[a + b x] \left(A + B \left(\operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)\right)^2}{b^4 g} +$$

$$\frac{1}{g} 2 B c^3 i^3 n \left(A + B \left(\operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)\right)$$

$$\left(\frac{\operatorname{Log}\left[\frac{a}{b} + x\right]^2}{2 b} + \frac{\operatorname{Log}[a + b x] \left(-\operatorname{Log}\left[\frac{a}{b} + x\right] + \operatorname{Log}\left[\frac{c}{d} + x\right] + \operatorname{Log}\left[\frac{a}{c+d x} + \frac{b x}{c+d x}\right]\right)}{b} - \right.$$

$$\frac{\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b c}{d}}\right]+\text{PolyLog}\left[2,\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b c}{d}}\right]}{b}\right]+\frac{1}{g}\,2\,B\,d^3\,i^3\,n$$

$$\left(A+B\left(\text{Log}\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b x}{c+d x}\right]\right)\right)\left(\frac{a^2\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3}-\frac{a^3\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^4}-\right.$$

$$\frac{a^2\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^3}-\frac{a\left(-\frac{1}{2}b\left(-\frac{a x}{b^2}+\frac{x^2}{2 b}+\frac{a^2\,\text{Log}[a+b x]}{b^3}\right)+\frac{1}{2}x^2\,\text{Log}\left[\frac{a+b x}{b}\right]\right)}{b^2}+$$

$$\frac{-\frac{1}{3}b\left(\frac{a^2 x}{b^3}-\frac{a x^2}{2 b^2}+\frac{x^3}{3 b}-\frac{a^3\,\text{Log}[a+b x]}{b^4}\right)+\frac{1}{3}x^3\,\text{Log}\left[\frac{a+b x}{b}\right]}{b}+$$

$$\frac{a\left(-\frac{1}{2}d\left(-\frac{c x}{d^2}+\frac{x^2}{2 d}+\frac{c^2\,\text{Log}[c+d x]}{d^3}\right)+\frac{1}{2}x^2\,\text{Log}\left[\frac{c+d x}{d}\right]\right)}{b^2}-$$

$$\frac{-\frac{1}{3}d\left(\frac{c^2 x}{d^3}-\frac{c x^2}{2 d^2}+\frac{x^3}{3 d}-\frac{c^3\,\text{Log}[c+d x]}{d^4}\right)+\frac{1}{3}x^3\,\text{Log}\left[\frac{c+d x}{d}\right]}{b}+$$

$$\left(\frac{a^2 x}{b^3}-\frac{a x^2}{2 b^2}+\frac{x^3}{3 b}-\frac{a^3\,\text{Log}[a+b x]}{b^4}\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d x}+\frac{b x}{c+d x}\right]\right)+$$

$$\left.\frac{a^3\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d(a+b x)}{-b c+a d}\right]+\text{PolyLog}\left[2,\frac{b(c+d x)}{b c-a d}\right]\right)}{b^4}\right)+$$

$$\frac{1}{g}6\,B\,c\,d^2\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b x}{c+d x}\right]\right)\right)\left(-\frac{a\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2}+\right.$$

$$\frac{a^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^3}+\frac{a\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^2}+\frac{-\frac{1}{2}b\left(-\frac{a x}{b^2}+\frac{x^2}{2 b}+\frac{a^2\,\text{Log}[a+b x]}{b^3}\right)+\frac{1}{2}x^2\,\text{Log}\left[\frac{a+b x}{b}\right]}{b}-$$

$$\frac{-\frac{1}{2}d\left(-\frac{c x}{d^2}+\frac{x^2}{2 d}+\frac{c^2\,\text{Log}[c+d x]}{d^3}\right)+\frac{1}{2}x^2\,\text{Log}\left[\frac{c+d x}{d}\right]}{b}+$$

$$\left(-\frac{a x}{b^2}+\frac{x^2}{2 b}+\frac{a^2\,\text{Log}[a+b x]}{b^3}\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d x}+\frac{b x}{c+d x}\right]\right)-$$

$$\left.\frac{a^2\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d(a+b x)}{-b c+a d}\right]+\text{PolyLog}\left[2,\frac{b(c+d x)}{b c-a d}\right]\right)}{b^3}\right)+$$

$$\frac{1}{g}6\,B\,c^2\,d\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b x}{c+d x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b x}{c+d x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b}-\frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^2}-\frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b}+\right.$$

$$\left(\frac{x}{b}-\frac{a\,\text{Log}[a+b x]}{b^2}\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d x}+\frac{b x}{c+d x}\right]\right)+$$

$$\frac{a \left(\text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] \right)}{b^2} \right) +$$

$$\frac{1}{g} B^2 c^3 i^3 n^2 \left(\frac{\text{Log}\left[\frac{a}{b} + x\right]^3}{3\,b} + \frac{\text{Log}[a+b\,x] \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2}{b} + \right.$$

$$2 \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\text{Log}\left[\frac{a}{b} + x\right]^2}{2\,b} - \frac{\text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[1 - \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right] + \text{PolyLog}\left[2, \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right]}{b} \right) + \frac{1}{b}$$

$$2 \left(\frac{1}{2} \text{Log}\left[\frac{c}{d} + x\right]^2 \text{Log}\left[1 - \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right] + \text{Log}\left[\frac{c}{d} + x\right] \text{PolyLog}\left[2, \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right] - \right.$$

$$\text{PolyLog}\left[3, \frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right] \right) - \frac{1}{b} 2 \left(\frac{1}{2} \text{Log}\left[\frac{a}{b} + x\right]^2 \left(\text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{b\,d\left(\frac{c}{d}+x\right)}{b\,c-a\,d}\right]\right) - \right.$$

$$\left. \text{Log}\left[\frac{a}{b} + x\right] \text{PolyLog}\left[2, -\frac{d\,(a+b\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[3, -\frac{d\,(a+b\,x)}{b\,c-a\,d}\right] \right) \right) +$$

$$\frac{1}{g} B^2 d^3 i^3 n^2 \left(-\frac{a^3 \text{Log}\left[\frac{a}{b} + x\right]^3}{3\,b^4} + \frac{a^2\,(a+b\,x)\left(2 - 2\,\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{a}{b} + x\right]^2\right)}{b^4} - \frac{1}{4\,b^4} \right.$$

$$a\,(a+b\,x)\left(-7\,a+b\,x + (6\,a - 2\,b\,x)\,\text{Log}\left[\frac{a}{b} + x\right] - 2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b} + x\right]^2\right) +$$

$$\frac{a^2\,(c+d\,x)\left(2 - 2\,\text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{c}{d} + x\right]^2\right)}{b^3\,d} - \frac{1}{4\,b^2\,d^2}$$

$$a\,(c+d\,x)\left(-7\,c+d\,x + (6\,c - 2\,d\,x)\,\text{Log}\left[\frac{c}{d} + x\right] - 2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d} + x\right]^2\right) +$$

$$\frac{1}{54\,b^4}\left(b\,x\left(66\,a^2 - 15\,a\,b\,x + 4\,b^2\,x^2\right) - 6\,b\,x\left(6\,a^2 - 3\,a\,b\,x + 2\,b^2\,x^2\right)\text{Log}\left[\frac{a}{b} + x\right] + \right.$$

$$18\left(a^3 + b^3\,x^3\right)\text{Log}\left[\frac{a}{b} + x\right]^2 - 66\,a^3\,\text{Log}[a+b\,x]\right) + \frac{1}{54\,b\,d^3}\left(d\,x\left(66\,c^2 - 15\,c\,d\,x + 4\,d^2\,x^2\right) - \right.$$

$$6\,d\,x\left(6\,c^2 - 3\,c\,d\,x + 2\,d^2\,x^2\right)\text{Log}\left[\frac{c}{d} + x\right] + 18\left(c^3 + d^3\,x^3\right)\text{Log}\left[\frac{c}{d} + x\right]^2 - 66\,c^3\,\text{Log}[c+d\,x]\right) +$$

$$\left(\frac{a^2\,x}{b^3} - \frac{a\,x^2}{2\,b^2} + \frac{x^3}{3\,b} - \frac{a^3\,\text{Log}[a+b\,x]}{b^4}\right)\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 +$$

$$2\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{a^2 \left(\frac{a}{b}+x\right) \left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3} - \frac{a^3 \text{Log}\left[\frac{a}{b}+x\right]^2}{2 b^4} - \frac{a^2 \left(\frac{c}{d}+x\right) \left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^3} - \right.$$

$$\frac{a \left(-\frac{1}{2} b \left(-\frac{a x}{b^2} + \frac{x^2}{2 b} + \frac{a^2 \text{Log}[a+b x]}{b^3}\right) + \frac{1}{2} x^2 \text{Log}\left[\frac{a+b x}{b}\right]\right)}{b^2} +$$

$$\frac{-\frac{1}{3} b \left(\frac{a^2 x}{b^3} - \frac{a x^2}{2 b^2} + \frac{x^3}{3 b} - \frac{a^3 \text{Log}[a+b x]}{b^4}\right) + \frac{1}{3} x^3 \text{Log}\left[\frac{a+b x}{b}\right]}{b} +$$

$$\frac{a \left(-\frac{1}{2} d \left(-\frac{c x}{d^2} + \frac{x^2}{2 d} + \frac{c^2 \text{Log}[c+d x]}{d^3}\right) + \frac{1}{2} x^2 \text{Log}\left[\frac{c+d x}{d}\right]\right)}{b^2} -$$

$$\frac{-\frac{1}{3} d \left(\frac{c^2 x}{d^3} - \frac{c x^2}{2 d^2} + \frac{x^3}{3 d} - \frac{c^3 \text{Log}[c+d x]}{d^4}\right) + \frac{1}{3} x^3 \text{Log}\left[\frac{c+d x}{d}\right]}{b} +$$

$$\left.\frac{a^3 \left(\text{Log}\left[\frac{c}{d}+x\right] \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] + \text{PolyLog}\left[2, \frac{b (c+d x)}{b c-a d}\right]\right)}{b^4}\right) - 2 \left(\frac{1}{b^4 d}\right.$$

$$a^2 \left(a d + 2 b d x - b d x \text{Log}\left[\frac{c}{d}+x\right] - b c \text{Log}[c+d x] + \text{Log}\left[\frac{a}{b}+x\right] \left(-d (a+b x) + d (a+b x)\right.\right.$$

$$\left.\left. \text{Log}\left[\frac{c}{d}+x\right] + (b c - a d) \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]\right) + (b c - a d) \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]\right) -$$

$$\frac{1}{4 b^4 d^2} a \left(-2 a b c d - 3 b^2 c d x - 3 a b d^2 x + b^2 d^2 x^2 + 2 a b d^2 x \text{Log}\left[\frac{c}{d}+x\right] - \right.$$

$$b^2 d^2 x^2 \text{Log}\left[\frac{c}{d}+x\right] + a^2 d^2 \text{Log}[a+b x] + b^2 c^2 \text{Log}[c+d x] + 2 a b c d \text{Log}[c+d x] +$$

$$\text{Log}\left[\frac{a}{b}+x\right] \left(b d \left(2 a c + b x (2 c - d x)\right) - 2 d^2 \left(a^2 - b^2 x^2\right) \text{Log}\left[\frac{c}{d}+x\right] + \left(-2 b^2 c^2 + \right.\right.$$

$$\left.\left.\left. 2 a^2 d^2\right) \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]\right) + \left(-2 b^2 c^2 + 2 a^2 d^2\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]\right) +$$

$$\frac{1}{108 b^4 d^3} \left(36 a b^2 c^2 d + 48 b^3 c^2 d x + 36 a b^2 c d^2 x + 48 a^2 b d^3 x - 15 b^3 c d^2 x^2 - \right.$$

$$15 a b^2 d^3 x^2 + 8 b^3 d^3 x^3 - 36 a^2 b d^3 x \text{Log}\left[\frac{c}{d}+x\right] + 18 a b^2 d^3 x^2 \text{Log}\left[\frac{c}{d}+x\right] -$$

$$12 b^3 d^3 x^3 \text{Log}\left[\frac{c}{d}+x\right] - 18 a^2 b c d^2 \text{Log}[a+b x] - 12 a^3 d^3 \text{Log}[a+b x] -$$

$$12 b^3 c^3 \text{Log}[c+d x] - 18 a b^2 c^2 d \text{Log}[c+d x] - 36 a^2 b c d^2 \text{Log}[c+d x] +$$

$$6 \text{Log}\left[\frac{a}{b}+x\right] \left(-b^2 d \left(6 a c^2 + b x \left(6 c^2 - 3 c d x + 2 d^2 x^2\right)\right) + 6 d^3 \left(a^3 + b^3 x^3\right) \text{Log}\left[\frac{c}{d}+x\right] + \right.$$

$$\left. 6 \left(b^3 c^3 - a^3 d^3\right) \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]\right) + 36 \left(b^3 c^3 - a^3 d^3\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]\right) -$$

$$\frac{1}{2 b^4} a^3 \left(\text{Log}\left[\frac{a}{b}+x\right]^2 \left(\text{Log}\left[\frac{c}{d}+x\right] - \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]\right) - 2 \text{Log}\left[\frac{a}{b}+x\right]\right.$$

$$\left.\left. \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right] + 2 \text{PolyLog}\left[3, \frac{d (a+b x)}{-b c+a d}\right]\right)\right) -$$

$$\frac{1}{b^4}a^3\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$

$$2\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Bigg)+$$

$$\frac{1}{g}\,3\,B^2\,c\,d^2\,i^3\,n^2\left(\frac{a^2\,\text{Log}\left[\frac{a}{b}+x\right]^3}{3\,b^3}-\frac{a\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3}+\frac{1}{4\,b^3}\right.$$

$$(a+b\,x)\left(-7\,a+b\,x+(6\,a-2\,b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]-2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)-$$

$$\frac{a\,(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{b^2\,d}+\frac{1}{4\,b\,d^2}$$

$$(c+d\,x)\left(-7\,c+d\,x+(6\,c-2\,d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]-2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

$$\left(-\frac{a\,x}{b^2}+\frac{x^2}{2\,b}+\frac{a^2\,\text{Log}[a+b\,x]}{b^3}\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2+$$

$$2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(-\frac{a\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2}+\frac{a^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^3}+\right.$$

$$\frac{a\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^2}+\frac{-\frac{1}{2}\,b\left(-\frac{a\,x}{b^2}+\frac{x^2}{2\,b}+\frac{a^2\,\text{Log}[a+b\,x]}{b^3}\right)+\frac{1}{2}\,x^2\,\text{Log}\left[\frac{a+b\,x}{b}\right]}{b}-$$

$$\frac{-\frac{1}{2}\,d\left(-\frac{c\,x}{d^2}+\frac{x^2}{2\,d}+\frac{c^2\,\text{Log}[c+d\,x]}{d^3}\right)+\frac{1}{2}\,x^2\,\text{Log}\left[\frac{c+d\,x}{d}\right]}{b}-$$

$$\frac{a^2\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^3}\right)-2\left(-\frac{1}{b^3\,d}\right.$$

$$a\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}[c+d\,x]+\text{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+b\,x)+d\,(a+b\,x)\right.\right.$$

$$\left.\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(b\,c-a\,d)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\frac{1}{4\,b^3\,d^2}\left(-2\,a\,b\,c\,d-3\,b^2\,c\,d\,x-3\,a\,b\,d^2\,x+b^2\,d^2\,x^2+2\,a\,b\,d^2\,x\,\text{Log}\left[\frac{c}{d}+x\right]-\right.$$

$$b^2\,d^2\,x^2\,\text{Log}\left[\frac{c}{d}+x\right]+a^2\,d^2\,\text{Log}[a+b\,x]+b^2\,c^2\,\text{Log}[c+d\,x]+2\,a\,b\,c\,d\,\text{Log}[c+d\,x]+$$

$$\text{Log}\left[\frac{a}{b}+x\right]\left(b\,d\,(2\,a\,c+b\,x\,(2\,c-d\,x))-2\,d^2\,(a^2-b^2\,x^2)\,\text{Log}\left[\frac{c}{d}+x\right]+(-2\,b^2\,c^2+2\,a^2\,d^2)\right.$$

$$\left.\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(-2\,b^2\,c^2+2\,a^2\,d^2)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\frac{1}{2\,b^3}$$

$$a^2\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$

$$2\, \text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) + \frac{1}{b^3}a^2\left(\text{Log}\left[\frac{c}{d}+x\right]^2 \text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + $$

$$2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] - 2\,\text{PolyLog}\left[3, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right) + $$

$$\frac{1}{g}3\,B^2\,c^2\,d\,i^3\,n^2\left(-\frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^3}{3\,b^2} + \frac{(a+b\,x)\,\left(2 - 2\,\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^2} + $$

$$\frac{(c+d\,x)\,\left(2 - 2\,\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{b\,d} + $$

$$\left(\frac{x}{b} - \frac{a\,\text{Log}\left[a+b\,x\right]}{b^2}\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 + $$

$$2\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\,\left(-1 + \text{Log}\left[\frac{a}{b}+x\right]\right)}{b} - \frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^2} - \frac{\left(\frac{c}{d}+x\right)\,\left(-1 + \text{Log}\left[\frac{c}{d}+x\right]\right)}{b} + \right.$$

$$\left.\frac{a\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^2}\right) - $$

$$2\left(\frac{1}{b^2\,d}\left(a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right] - b\,c\,\text{Log}\left[c+d\,x\right] + \text{Log}\left[\frac{a}{b}+x\right]\right.\right.$$

$$\left(-d\,(a+b\,x) + d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right] + (b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right) + (b\,c-a\,d)$$

$$\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) - \frac{1}{2\,b^2}a\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right] - \text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right) - \right.$$

$$2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 2\,\text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) - $$

$$\frac{1}{b^2}a\left(\text{Log}\left[\frac{c}{d}+x\right]^2 \text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] - \right.$$

$$2\,\text{PolyLog}\left[3, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)$$

Problem 183: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^2}\,dx$$

Optimal (type 4, 739 leaves, 17 steps):

$$-\frac{2\,B^2\,(b\,c-a\,d)^2\,i^3\,n^2\,(c+d\,x)}{b^3\,g^2\,(a+b\,x)}-\frac{B\,d^2\,(b\,c-a\,d)\,i^3\,n\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^4\,g^2}-$$

$$\frac{2\,B\,(b\,c-a\,d)^2\,i^3\,n\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^3\,g^2\,(a+b\,x)}+$$

$$\frac{2\,d^2\,(b\,c-a\,d)\,i^3\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^4\,g^2}-$$

$$\frac{(b\,c-a\,d)^2\,i^3\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^3\,g^2\,(a+b\,x)}+\frac{d\,i^3\,(c+d\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,b^2\,g^2}+$$

$$\frac{4\,B\,d\,(b\,c-a\,d)^2\,i^3\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{b^4\,g^2}+\frac{B^2\,d\,(b\,c-a\,d)^2\,i^3\,n^2\,\text{Log}[c+d\,x]}{b^4\,g^2}+$$

$$\frac{B\,d\,(b\,c-a\,d)^2\,i^3\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^2}-$$

$$\frac{3\,d\,(b\,c-a\,d)^2\,i^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^2}+$$

$$\frac{4\,B^2\,d\,(b\,c-a\,d)^2\,i^3\,n^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b^4\,g^2}-\frac{B^2\,d\,(b\,c-a\,d)^2\,i^3\,n^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^2}+$$

$$\frac{6\,B\,d\,(b\,c-a\,d)^2\,i^3\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^2}+$$

$$\frac{6\,B^2\,d\,(b\,c-a\,d)^2\,i^3\,n^2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^2}$$

Result (type 4, 5470 leaves) :

$$\frac{d^2\,(3\,b\,c-2\,a\,d)\,i^3\,x\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{b^3\,g^2}+$$

$$\frac{d^3\,i^3\,x^2\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{2\,b^2\,g^2}+\frac{1}{b^4\,g^2}$$

$$3\,d\,(b\,c-a\,d)^2\,i^3\,\text{Log}[a+b\,x]\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2+$$

$$\frac{1}{b^4\,g^2\,(a+b\,x)}\left(-A^2\,b^3\,c^3\,i^3+3\,a\,A^2\,b^2\,c^2\,d\,i^3-3\,a^2\,A^2\,b\,c\,d^2\,i^3+a^3\,A^2\,d^3\,i^3-2\,A\,b^3\,B\,c^3\,i^3\right.$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+6\,a\,A\,b^2\,B\,c^2\,d\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$6\,a^2\,A\,b\,B\,c\,d^2\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+2\,a^3\,A\,B\,d^3\,i^3$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-b^3\,B^2\,c^3\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$3\,a\,b^2\,B^2\,c^2\,d\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2-3\,a^2\,b\,B^2\,c\,d^2\,i^3$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+a^3\,B^2\,d^3\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)+$$

$$\left(B^2\,c^3\,i^3\,n^2\left(-2\,b\,c+2\,a\,d-2\,d\,(a+b\,x)\,\text{Log}[a+b\,x]+(-2\,b\,c+2\,a\,d)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-\right.\right.$$

$$\left.\left.b\,(c+d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+2\,d\,(a+b\,x)\,\text{Log}[c+d\,x]\right)\right)\Big/\left(b\,(b\,c-a\,d)\,g^2\,(a+b\,x)\right)+\frac{1}{g^2}$$

$$2\,B\,c^3\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\left(-\frac{\left(\frac{a}{b}+x\right)\left(\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{(a+b\,x)^2\,\text{Log}\left[\frac{a}{b}+x\right]}-\right.$$

$$\left.\frac{\frac{b\left(\frac{c}{d}+x\right)\text{Log}\left[\frac{c}{d}+x\right]}{\left(-a+\frac{b\,c}{d}\right)^2\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)}+\frac{\text{Log}\left[1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right]}{-a+\frac{b\,c}{d}}}{b}-\frac{-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]}{b\,(a+b\,x)}\right)+$$

$$\frac{1}{g^2}\,2\,B\,d^3\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{2\,a\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3}+\frac{3\,a^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^4}+\frac{a^3\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^4\,(a+b\,x)}+\right.$$

$$\frac{2\,a\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^3}+\frac{-\frac{1}{2}\,b\left(-\frac{a\,x}{b^2}+\frac{x^2}{2\,b}+\frac{a^2\,\text{Log}[a+b\,x]}{b^3}\right)+\frac{1}{2}\,x^2\,\text{Log}\left[\frac{a+b\,x}{b}\right]}{b^2}+$$

$$\left(a^3\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\Big/$$

$$\left(b^4\,(b\,c-a\,d)\,(a+b\,x)\right)-\frac{-\frac{1}{2}\,d\left(-\frac{c\,x}{d^2}+\frac{x^2}{2\,d}+\frac{c^2\,\text{Log}[c+d\,x]}{d^3}\right)+\frac{1}{2}\,x^2\,\text{Log}\left[\frac{c+d\,x}{d}\right]}{b^2}+$$

$$\frac{1}{2\,b^4}\left(-4\,a\,b\,x+b^2\,x^2+\frac{2\,a^3}{a+b\,x}+6\,a^2\,\text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)-\frac{3\,a^2\left(\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^4}\right)+$$

$$\frac{1}{g^2}\,6\,B\,c\,d^2\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2}-\frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{b^3}-\frac{a^2\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)}-\frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^2}-\right.$$

$$\left(a^2\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\right)\right)\Big/$$

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)+\frac{1}{b^3}$$

$$\left(b\,x-\frac{a^2}{a+b\,x}-2\,a\,\text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)+$$

$$\left.\frac{2\,a\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^3}\right)+$$

$$\frac{1}{g^2}6\,B\,c^2\,d\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^2}+\frac{a\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2\,(a+b\,x)}+\right.$$

$$\left(a\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\right)\right)\Big/$$

$$\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right)+\frac{1}{b^2}$$

$$\left(\frac{a}{a+b\,x}+\text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)-$$

$$\left.\frac{\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2}\right)+$$

$$\frac{1}{g^2}B^2\,d^3\,i^3\,n^2\left(\frac{a^2\,\text{Log}\left[\frac{a}{b}+x\right]^3}{b^4}-\frac{2\,a\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^4}+\right.$$

$$\frac{a^3\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^4\,(a+b\,x)}+\frac{1}{4\,b^4}$$

$$(a+b\,x)\left(-7\,a+b\,x+(6\,a-2\,b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]-2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)-$$

$$\frac{2\,a\,(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{b^3\,d}+\frac{1}{4\,b^2\,d^2}$$

$$(c+d\,x)\left(-7\,c+d\,x+(6\,c-2\,d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]-2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

$$\frac{1}{2\,b^4}\left(-4\,a\,b\,x+b^2\,x^2+\frac{2\,a^3}{a+b\,x}+6\,a^2\,\text{Log}[a+b\,x]\right)$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2-\left(a^3\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+\right.\right.$$

$$\left.\left.\left.2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)\Big/$$

$$\left(b^4 \, (b\,c - a\,d) \, (a + b\,x)\right) + 2 \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c + d\,x} + \frac{b\,x}{c + d\,x}\right]\right)$$

$$\left(-\frac{2\,a\,\left(\frac{a}{b} + x\right)\,\left(-1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{b^3} + \frac{3\,a^2\,\text{Log}\left[\frac{a}{b} + x\right]^2}{2\,b^4} + \frac{a^3\,\left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right)}{b^4\,(a + b\,x)} + \right.$$

$$\frac{2\,a\,\left(\frac{c}{d} + x\right)\,\left(-1 + \text{Log}\left[\frac{c}{d} + x\right]\right)}{b^3} + \frac{-\frac{1}{2}\,b\,\left(-\frac{a\,x}{b^2} + \frac{x^2}{2\,b} + \frac{a^2\,\text{Log}[a+b\,x]}{b^3}\right) + \frac{1}{2}\,x^2\,\text{Log}\left[\frac{a+b\,x}{b}\right]}{b^2} +$$

$$\left(a^3\,\left(\left(-b\,c + a\,d\right)\,\text{Log}\left[\frac{c}{d} + x\right] + d\,(a + b\,x)\,\left(\text{Log}[a + b\,x] - \text{Log}[c + d\,x]\right)\right)\right)\Big/$$

$$\left(b^4\,(b\,c - a\,d)\,(a + b\,x)\right) - \frac{-\frac{1}{2}\,d\,\left(-\frac{c\,x}{d^2} + \frac{x^2}{2\,d} + \frac{c^2\,\text{Log}[c+d\,x]}{d^3}\right) + \frac{1}{2}\,x^2\,\text{Log}\left[\frac{c+d\,x}{d}\right]}{b^2} -$$

$$\frac{3\,a^2\,\left(\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^4}\right) - 2\,\left(-\frac{1}{b^4\,d}\right)$$

$$2\,a\,\left(a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\left[\frac{c}{d} + x\right] - b\,c\,\text{Log}[c + d\,x] + \text{Log}\left[\frac{a}{b} + x\right]\,\left(-d\,(a + b\,x) + d\,(a + b\,x)\right.\right.$$

$$\left.\text{Log}\left[\frac{c}{d} + x\right] + (b\,c - a\,d)\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right) + (b\,c - a\,d)\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\Big) +$$

$$\frac{1}{4\,b^4\,d^2}\left(-2\,a\,b\,c\,d - 3\,b^2\,c\,d\,x - 3\,a\,b\,d^2\,x + b^2\,d^2\,x^2 + 2\,a\,b\,d^2\,x\,\text{Log}\left[\frac{c}{d} + x\right] - \right.$$

$$b^2\,d^2\,x^2\,\text{Log}\left[\frac{c}{d} + x\right] + a^2\,d^2\,\text{Log}[a + b\,x] + b^2\,c^2\,\text{Log}[c + d\,x] + 2\,a\,b\,c\,d\,\text{Log}[c + d\,x] +$$

$$\text{Log}\left[\frac{a}{b} + x\right]\,\left(b\,d\,\left(2\,a\,c + b\,x\,(2\,c - d\,x)\right) - 2\,d^2\,\left(a^2 - b^2\,x^2\right)\,\text{Log}\left[\frac{c}{d} + x\right] + \left(-2\,b^2\,c^2 + 2\,a^2\,d^2\right)\right.$$

$$\left.\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right) + \left(-2\,b^2\,c^2 + 2\,a^2\,d^2\right)\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right) -$$

$$\left(a^3\,\left(d\,(a + b\,x)\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\,\left(\left(-b\,c + a\,d\right)\,\text{Log}\left[\frac{c}{d} + x\right] + d\,(a + b\,x)\right.\right.\right.$$

$$\left(\text{Log}[a + b\,x] - \text{Log}[c + d\,x]\right)\Big) - 2\,\text{Log}\left[\frac{a}{b} + x\right]\,\left((b\,c - a\,d)\,\text{Log}\left[\frac{c}{d} + x\right] + \right.$$

$$\left.d\,(a + b\,x)\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right) - 2\,d\,(a + b\,x)\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\Big)\Big)\Big/$$

$$\left(2\,b^4\,(b\,c - a\,d)\,(a + b\,x)\right) + \frac{1}{2\,b^4}\,3\,a^2\,\left(\text{Log}\left[\frac{a}{b} + x\right]^2\,\left(\text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right) - \right.$$

$$\left.2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + 2\,\text{PolyLog}\left[3, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right) +$$

$$\frac{1}{b^4}\,3\,a^2\,\left(\text{Log}\left[\frac{c}{d} + x\right]^2\,\text{Log}\left[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + 2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{PolyLog}\left[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right] - \right.$$

$$\left.2\,\text{PolyLog}\left[3, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right)\Big) +$$

$$\frac{1}{g^2}\, 3\, B^2\, c\, d^2\, i^3\, n^2 \left(-\frac{2\, a\, \text{Log}\left[\frac{a}{b}+x\right]^3}{3\, b^3} + \frac{(a+b\, x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3} - \right.$$

$$\frac{a^2\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3\,(a+b\,x)} + \frac{(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{b^2\,d} + \frac{1}{b^3}$$

$$\left(b\,x-\frac{a^2}{a+b\,x}-2\,a\,\text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2 +$$

$$\left(a^2\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$\left.\left.\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right) \middle/ \left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)\right) +$$

$$2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^2}-\right.$$

$$\frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{b^3}-\frac{a^2\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)}-\frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^2}-$$

$$\left(a^2\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\right)\right)\middle/$$

$$\left.\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)+\frac{2\,a\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^3}\right)-$$

$$2\left(\frac{1}{b^3\,d}\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}[c+d\,x]+\text{Log}\left[\frac{a}{b}+x\right]\right.\right.$$

$$\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(b\,c-a\,d)$$

$$\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\left(a^2\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\left(\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+\right.\right.$$

$$d\,(a+b\,x)\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\left(\left(b\,c-a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\middle/$$

$$\left(2\,b^3\,(b\,c-a\,d)\,(a+b\,x)\right)-\frac{1}{b^3}a\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)-$$

$$\frac{1}{b^3}2\,a\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-\right.$$

$$\left.\left.2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$\frac{1}{g^2} \, 3\, B^2\, c^2\, d\, i^3\, n^2 \left(\frac{\mathrm{Log}\!\left[\frac{a}{b}+x\right]^3}{3\,b^2} + \frac{a\left(2+2\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]+\mathrm{Log}\!\left[\frac{a}{b}+x\right]^2\right)}{b^2\,(a+b\,x)} + \frac{1}{b^2} \right.$$

$$\left(\frac{a}{a+b\,x}+\mathrm{Log}[a+b\,x]\right)\left(-\mathrm{Log}\!\left[\frac{a}{b}+x\right]+\mathrm{Log}\!\left[\frac{c}{d}+x\right]+\mathrm{Log}\!\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2 -$$

$$\left(a\left(-b\,(c+d\,x)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]\mathrm{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$\left.\left.\left.2\,d\,(a+b\,x)\,\mathrm{PolyLog}\!\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\middle/\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right)\right) +$$

$$2\left(-\mathrm{Log}\!\left[\frac{a}{b}+x\right]+\mathrm{Log}\!\left[\frac{c}{d}+x\right]+\mathrm{Log}\!\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)\left(\frac{\mathrm{Log}\!\left[\frac{a}{b}+x\right]^2}{2\,b^2}+\frac{a\left(1+\mathrm{Log}\!\left[\frac{a}{b}+x\right]\right)}{b^2\,(a+b\,x)}+\right.$$

$$\left(a\left((-b\,c+a\,d)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x])\right)\right)\middle/$$

$$\left.\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right)-\frac{\mathrm{Log}\!\left[\frac{c}{d}+x\right]\mathrm{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\mathrm{PolyLog}\!\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2}\right)-$$

$$2\left(-\left(\left(a\left(d\,(a+b\,x)\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]^2+2\left((-b\,c+a\,d)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\right.\right.\right.\right.\right.$$

$$\left(\mathrm{Log}[a+b\,x]-\mathrm{Log}[c+d\,x]\right)\Big)-2\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]\left((b\,c-a\,d)\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\left.d\,(a+b\,x)\,\mathrm{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\mathrm{PolyLog}\!\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Big)\middle/$$

$$\left(2\,b^2\,(b\,c-a\,d)\,(a+b\,x)\right)\right)+\frac{1}{2\,b^2}\left(\mathrm{Log}\!\left[\frac{a}{b}+x\right]^2\left(\mathrm{Log}\!\left[\frac{c}{d}+x\right]-\mathrm{Log}\!\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,\mathrm{Log}\!\left[\frac{a}{b}+x\right]\mathrm{PolyLog}\!\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\mathrm{PolyLog}\!\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\frac{1}{b^2}\left(\mathrm{Log}\!\left[\frac{c}{d}+x\right]^2\mathrm{Log}\!\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\mathrm{Log}\!\left[\frac{c}{d}+x\right]\mathrm{PolyLog}\!\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-\right.$$

$$\left.\left.2\,\mathrm{PolyLog}\!\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)$$

Problem 184: Result more than twice size of optimal antiderivative.

$$\int \frac{(c\,i+d\,i\,x)^3\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^3}\,dx$$

Optimal (type 4, 644 leaves, 13 steps):

$$- \frac{4 B^2 d \, (b c - a d) \, i^3 \, n^2 \, (c + d x)}{b^3 \, g^3 \, (a + b x)} - \frac{B^2 \, (b c - a d) \, i^3 \, n^2 \, (c + d x)^2}{4 b^2 \, g^3 \, (a + b x)^2} -$$

$$\frac{4 B d \, (b c - a d) \, i^3 \, n \, (c + d x) \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)}{b^3 \, g^3 \, (a + b x)} -$$

$$\frac{B \, (b c - a d) \, i^3 \, n \, (c + d x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)}{2 b^2 \, g^3 \, (a + b x)^2} + \frac{d^3 \, i^3 \, (a + b x) \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)^2}{b^4 \, g^3} -$$

$$\frac{2 d \, (b c - a d) \, i^3 \, (c + d x) \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)^2}{b^3 \, g^3 \, (a + b x)} - \frac{(b c - a d) \, i^3 \, (c + d x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)^2}{2 b^2 \, g^3 \, (a + b x)^2} +$$

$$\frac{2 B d^2 \, (b c - a d) \, i^3 \, n \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right) \text{Log}\left[\frac{b c - a d}{b \, (c + d x)}\right]}{b^4 \, g^3} -$$

$$\frac{3 d^2 \, (b c - a d) \, i^3 \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)^2 \text{Log}\left[1 - \frac{b \, (c + d x)}{d \, (a + b x)}\right]}{b^4 \, g^3} +$$

$$\frac{2 B^2 d^2 \, (b c - a d) \, i^3 \, n^2 \, \text{PolyLog}\left[2, \frac{d \, (a + b x)}{b \, (c + d x)}\right]}{b^4 \, g^3} +$$

$$\frac{6 B d^2 \, (b c - a d) \, i^3 \, n \left(A + B \, \text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right) \text{PolyLog}\left[2, \frac{b \, (c + d x)}{d \, (a + b x)}\right]}{b^4 \, g^3} +$$

$$\frac{6 B^2 d^2 \, (b c - a d) \, i^3 \, n^2 \, \text{PolyLog}\left[3, \frac{b \, (c + d x)}{d \, (a + b x)}\right]}{b^4 \, g^3}$$

Result (type 4, 6613 leaves) :

$$\frac{d^3 \, i^3 \, x \left(A + B \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right)\right)^2}{b^3 \, g^3} + \frac{1}{b^4 \, g^3}$$

$$3 d^2 \, (b c - a d) \, i^3 \, \text{Log}[a + b x] \left(A + B \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right)\right)^2 -$$

$$\frac{1}{b^4 \, g^3 \, (a + b x)} \, 3 \left(A^2 \, b^2 \, c^2 \, d \, i^3 - 2 a \, A^2 \, b c \, d^2 \, i^3 + a^2 \, A^2 \, d^3 \, i^3 + \right.$$

$$2 A \, b^2 \, B \, c^2 \, d \, i^3 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right) - 4 a \, A \, b \, B \, c \, d^2 \, i^3$$

$$\left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right) + 2 a^2 \, A \, B \, d^3 \, i^3 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right) +$$

$$b^2 \, B^2 \, c^2 \, d \, i^3 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 - 2 a \, b \, B^2 \, c \, d^2 \, i^3$$

$$\left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 + a^2 \, B^2 \, d^3 \, i^3 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 \right) +$$

$$\frac{1}{2 b^4 \, g^3 \, (a + b x)^2} \left(-A^2 \, b^3 \, c^3 \, i^3 + 3 a \, A^2 \, b^2 \, c^2 \, d \, i^3 - 3 a^2 \, A^2 \, b c \, d^2 \, i^3 + a^3 \, A^2 \, d^3 \, i^3 - \right.$$

$$2 A \, b^3 \, B \, c^3 \, i^3 \left(\text{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - n \, \text{Log}\left[\frac{a + b x}{c + d x}\right]\right) +$$

$$6\,a\,A\,b^2\,B\,c^2\,d\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$6\,a^2\,A\,b\,B\,c\,d^2\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+2\,a^3\,A\,B\,d^3\,i^3$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-b^3\,B^2\,c^3\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$3\,a\,b^2\,B^2\,c^2\,d\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2-3\,a^2\,b\,B^2\,c\,d^2\,i^3$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+a^3\,B^2\,d^3\,i^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\Bigg)-$$

$$\left(B^2\,c^3\,i^3\,n^2\left(b^2\,c^2-8\,a\,b\,c\,d+7\,a^2\,d^2-6\,b^2\,c\,d\,x+6\,a\,b\,d^2\,x-6\,d^2\left(a+b\,x\right)^2\text{Log}\left[a+b\,x\right]+\right.\right.$$

$$2\left(b\,c-a\,d\right)\left(b\,c-3\,a\,d-2\,b\,d\,x\right)\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+2\,b\left(c+d\,x\right)\left(b\,c-2\,a\,d-b\,d\,x\right)\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+$$

$$\left.\left.6\,a^2\,d^2\,\text{Log}\left[c+d\,x\right]+12\,a\,b\,d^2\,x\,\text{Log}\left[c+d\,x\right]+6\,b^2\,d^2\,x^2\,\text{Log}\left[c+d\,x\right]\right)\right)\Bigg/$$

$$\left(4\,b\left(b\,c-a\,d\right)^2g^3\left(a+b\,x\right)^2\right)+\frac{1}{g^3}2\,B\,c^3\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{\left(\frac{a}{b}+x\right)\left(2\,\text{Log}\left[\frac{a}{b}+x\right]+4\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{8\left(a+b\,x\right)^3\text{Log}\left[\frac{a}{b}+x\right]}-\frac{1}{2\,b}\right.$$

$$\left(\frac{b\left(\frac{c}{d}+x\right)}{\left(-a+\frac{b\,c}{d}\right)^3\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)}-\left(\frac{b^2\left(\frac{c}{d}+x\right)^2}{\left(-a+\frac{b\,c}{d}\right)^4\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)^2}+\frac{2\,b\left(\frac{c}{d}+x\right)}{\left(-a+\frac{b\,c}{d}\right)^3\left(1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right)}\right)\right)\text{Log}\left[\frac{c}{d}+x\right]-$$

$$\left.\frac{\text{Log}\left[1-\frac{b\left(\frac{c}{d}+x\right)}{-a+\frac{b\,c}{d}}\right]}{\left(-a+\frac{b\,c}{d}\right)^2}\right)-\frac{-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]}{2\,b\left(a+b\,x\right)^2}\right)+$$

$$\frac{1}{g^3}6\,B\,c^2\,d\,i^3\,n\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{1+\text{Log}\left[\frac{a}{b}+x\right]}{b^2\left(a+b\,x\right)}+\frac{a\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^2\left(a+b\,x\right)^2}-\right.$$

$$\frac{\left(-b\,c+a\,d\right)\text{Log}\left[\frac{c}{d}+x\right]+d\left(a+b\,x\right)\left(\text{Log}\left[a+b\,x\right]-\text{Log}\left[c+d\,x\right]\right)}{b^2\left(b\,c-a\,d\right)\left(a+b\,x\right)}-$$

$$\frac{a\left(\text{Log}\left[\frac{c}{d}+x\right]+\frac{d\left(a+b\,x\right)\left(b\,c-a\,d+d\left(a+b\,x\right)\text{Log}\left[a+b\,x\right]-d\left(a+b\,x\right)\text{Log}\left[c+d\,x\right]\right)}{\left(b\,c-a\,d\right)^2}\right)}{2\,b^2\left(a+b\,x\right)^2}-$$

$$\frac{(a + 2\,b\,x)\,\left(-\mathrm{Log}\left[\frac{a}{b} + x\right] + \mathrm{Log}\left[\frac{c}{d} + x\right] + \mathrm{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)}{2\,b^2\,(a+b\,x)^2}\Bigg) \; +$$

$$\frac{1}{g^3}\,2\,B\,d^3\,\dot{\mathbb{i}}^3\,n\,\left(A + B\left(\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\Bigg(\frac{\left(\frac{a}{b}+x\right)\left(-1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{b^3} \;-$$

$$\frac{3\,a\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^4} - \frac{3\,a^2\,\left(1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{b^4\,(a+b\,x)} + \frac{a^3\,\left(1+2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^4\,(a+b\,x)^2} - \frac{\left(\frac{c}{d}+x\right)\left(-1+\mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{b^3} \;-$$

$$\left(3\,a^2\left((-b\,c+a\,d)\,\mathrm{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x] - \mathrm{Log}[c+d\,x])\right)\right)\Bigg/$$

$$\left(b^4\,(b\,c-a\,d)\,(a+b\,x)\right) - \frac{a^3\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\mathrm{Log}[a+b\,x]-d\,(a+b\,x)\,\mathrm{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^4\,(a+b\,x)^2} \;-$$

$$\frac{1}{2\,b^4}\left(-2\,b\,x + \frac{a^2\,(5\,a+6\,b\,x)}{(a+b\,x)^2} + 6\,a\,\mathrm{Log}[a+b\,x]\right)\left(-\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right] +\right.$$

$$\left.\mathrm{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right) + \frac{3\,a\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \mathrm{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^4}\Bigg) \;+$$

$$\frac{1}{g^3}\,6\,B\,c\,d^2\,\dot{\mathbb{i}}^3\,n\,\left(A + B\left(\mathrm{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\mathrm{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\Bigg(\frac{\mathrm{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^3} + \frac{2\,a\,\left(1+\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)} - \frac{a^2\,\left(1+2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^3\,(a+b\,x)^2} \;+$$

$$\left(2\,a\left((-b\,c+a\,d)\,\mathrm{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x] - \mathrm{Log}[c+d\,x])\right)\right)\Bigg/$$

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right) + \frac{a^2\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\mathrm{Log}[a+b\,x]-d\,(a+b\,x)\,\mathrm{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^3\,(a+b\,x)^2} \;+$$

$$\frac{1}{2\,b^3}\left(\frac{a\,(3\,a+4\,b\,x)}{(a+b\,x)^2} + 2\,\mathrm{Log}[a+b\,x]\right)\left(-\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right] + \mathrm{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right) \;-$$

$$\frac{\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \mathrm{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}\Bigg) \;+$$

$$\frac{1}{g^3}\,3\,B^2\,c^2\,d\,\dot{\mathbb{i}}^3\,n^2\,\Bigg(-\frac{2 + 2\,\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{a}{b}+x\right]^2}{b^2\,(a+b\,x)} + \frac{a\,\left(1+2\,\mathrm{Log}\left[\frac{a}{b}+x\right] + 2\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^2\,(a+b\,x)^2} \;+$$

$$2\,\Bigg(-\frac{1+\mathrm{Log}\left[\frac{a}{b}+x\right]}{b^2\,(a+b\,x)} + \frac{a\,\left(1+2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^2\,(a+b\,x)^2} - \left((-b\,c+a\,d)\,\mathrm{Log}\left[\frac{c}{d}+x\right] +\right.$$

$$\left.d\,(a+b\,x)\,(\mathrm{Log}[a+b\,x] - \mathrm{Log}[c+d\,x])\right)\Bigg/\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right) \;-$$

$$\frac{a\left(\text{Log}\left[\frac{c}{d}+x\right]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^2\,(a+b\,x)^2}$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)-$$

$$\frac{(a+2\,b\,x)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2}{2\,b^2\,(a+b\,x)^2}-$$

$$2\left(\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+\right.\right.\right.$$

$$\left.\left.d\,x])\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\left((b\,c-a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Big/\left(2\,b^2\,(b\,c-a\,d)\,(a+b\,x)\right)+$$

$$\left(a\left(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)\text{Log}\left[\frac{c}{d}+x\right]+d^2\,(a+b\,x)^2\right.\right.$$

$$\text{Log}[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x]+d\,(a+b\,x)\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+\right.$$

$$2\,(b\,c-a\,d)\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)-2\,d\,(a+b\,x)\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\right.$$

$$\left.\left.\left.\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right)\Big/\left(4\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)\right)+$$

$$\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$

$$\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Big/\left(b^2\,(b\,c-a\,d)\,(a+b\,x)\right)+$$

$$\left(a\left(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\text{Log}\left[\frac{c}{d}+x\right]^2-2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\left(b\,(c+d\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\left.\left.2\,d^2\,(a+b\,x)^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Big/\left(2\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)\right)+$$

$$\frac{1}{g^3}\,B^2\,d^3\,i^3\,n^2\left(-\frac{a\,\text{Log}\left[\frac{a}{b}+x\right]^3}{b^4}+\frac{(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^4}-\right.$$

$$\frac{3\,a^2\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^4\,(a+b\,x)}+\frac{a^3\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^4\,(a+b\,x)^2}+$$

$$\left.\frac{(c+d\,x)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{b^3\,d}-\frac{1}{2\,b^4}\left(-2\,b\,x+\frac{a^2\,(5\,a+6\,b\,x)}{(a+b\,x)^2}+6\,a\,\text{Log}[a+b\,x]\right)\right)$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2+$$

$$\left(3\,a^2\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$\left.\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left(b^4\,(b\,c-a\,d)\,(a+b\,x)\right)+$$

$$\left(a^3\left(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\text{Log}\left[\frac{c}{d}+x\right]^2-2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\left(b\,(c+d\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\left.\left.2\,d^2\,(a+b\,x)^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/$$

$$\left(2\,b^4\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)+2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3}-\frac{3\,a\,\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^4}-\frac{3\,a^2\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^4\,(a+b\,x)}+\right.$$

$$\frac{a^3\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^4\,(a+b\,x)^2}-\frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{b^3}-$$

$$\left(3\,a^2\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\Big/\left(b^4\,(b\,c-a\,d)\right.$$

$$\left.(a+b\,x)\right)-\frac{a^3\left(\text{Log}\left[\frac{c}{d}+x\right]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^4\,(a+b\,x)^2}+$$

$$\left.\frac{3\,a\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)}{b^4}\right)-$$

$$2\left(\frac{1}{b^4\,d}\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}[c+d\,x]+\text{Log}\left[\frac{a}{b}+x\right]\right.\right.$$

$$\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(b\,c-a\,d)$$

$$\left.\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\left(3\,a^2\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+\right.\right.\right.$$

$$d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)-2\,\text{Log}\left[\frac{a}{b}+x\right]\left((b\,c-a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\left.\left.d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Big/$$

$$\left(2\,b^4\,(b\,c-a\,d)\,(a+b\,x)\right)+\left(a^3\left(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2\right.\right.$$

$$\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)\text{Log}\left[\frac{c}{d}+x\right]+d^2\,(a+b\,x)^2\,\text{Log}[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x]+$$

$$d\,(a+b\,x)\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\,(b\,c-a\,d)\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)-\right.$$

$$\left.\left.2\,d\,(a+b\,x)\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\right)\Big/$$

$$\left(4\,b^4\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)-\frac{1}{2\,b^4}3\,a\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)-$$

$$\frac{1}{b^4}3\,a\left(\text{Log}\left[\frac{c}{d}+x\right]^2\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-\right.$$

$$\left.2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$\frac{1}{g^3}3\,B^2\,c\,d^2\,i^3\,n^2\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^3}{3\,b^3}+\frac{2\,a\left(2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b^3\,(a+b\,x)}-\right.$$

$$\frac{a^2\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{4\,b^3\,(a+b\,x)^2}+\frac{1}{2\,b^3}$$

$$\left(\frac{a\,(3\,a+4\,b\,x)}{(a+b\,x)^2}+2\,\text{Log}[a+b\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2-$$

$$\left(2\,a\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2+2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$\left.\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)-$$

$$\left(a^2\left(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\text{Log}\left[\frac{c}{d}+x\right]^2-2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]\left(b\,(c+d\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$

$$\left.\left.2\,d^2\,(a+b\,x)^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Big/$$

$$\left(2\,b^3\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)+2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^3}+\frac{2\,a\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^3\,(a+b\,x)}-\frac{a^2\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^3\,(a+b\,x)^2}+\right.$$

$$\left(2\,a\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\,(\text{Log}[a+b\,x]-\text{Log}[c+d\,x])\right)\right)\Big/\left(b^3\,(b\,c-a\,d)\right.$$

$$\left.(a+b\,x)\right)+\frac{a^2\left(\text{Log}\left[\frac{c}{d}+x\right]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,b^3\,(a+b\,x)^2}-$$

$$\frac{\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}\Bigg)-$$

$$2\left(-\left(\left(a\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+d\,(a+b\,x)\right.\right.\right.\right.\right.$$

$$\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right)\Big)-2\,\text{Log}\left[\frac{a}{b}+x\right]\left((b\,c-a\,d)\,\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-2\,d\,(a+b\,x)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\Bigg)\Bigg)\Bigg/$$

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x)\right)\Bigg)-\left(a^2\left(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2\right.\right.$$

$$\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)\text{Log}\left[\frac{c}{d}+x\right]+d^2\,(a+b\,x)^2\,\text{Log}[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x]+$$

$$d\,(a+b\,x)\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\,(b\,c-a\,d)\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)-\right.$$

$$\left.2\,d\,(a+b\,x)\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Bigg)\Bigg)\Bigg/$$

$$\left(4\,b^3\,(b\,c-a\,d)^2\,(a+b\,x)^2\right)+\frac{1}{2\,b^3}\left(\text{Log}\left[\frac{a}{b}+x\right]^2\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)-\right.$$

$$\left.2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Bigg)+$$

$$\frac{1}{b^3}\left(\text{Log}\left[\frac{c}{d}+x\right]^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-\right.$$

$$\left.2\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Bigg)\Bigg)$$

Problem 185: Result more than twice size of optimal antiderivative.

$$\int\frac{(c\,i+d\,i\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^4}\,dx$$

Optimal (type 4, 561 leaves, 13 steps):

$$-\frac{2\,B^2\,d^2\,i^3\,n^2\,(c+d\,x)}{b^3\,g^4\,(a+b\,x)}-\frac{B^2\,d\,i^3\,n^2\,(c+d\,x)^2}{4\,b^2\,g^4\,(a+b\,x)^2}-$$

$$\frac{2\,B^2\,i^3\,n^2\,(c+d\,x)^3}{27\,b\,g^4\,(a+b\,x)^3}-\frac{2\,B\,d^2\,i^3\,n\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{b^3\,g^4\,(a+b\,x)}-$$

$$\frac{B\,d\,i^3\,n\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,b^2\,g^4\,(a+b\,x)^2}-\frac{2\,B\,i^3\,n\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,b\,g^4\,(a+b\,x)^3}-$$

$$\frac{d^2\,i^3\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{b^3\,g^4\,(a+b\,x)}-\frac{d\,i^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,b^2\,g^4\,(a+b\,x)^2}-$$

$$\frac{i^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,b\,g^4\,(a+b\,x)^3}-\frac{d^3\,i^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^4}+$$

$$\frac{2\,B\,d^3\,i^3\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^4}+\frac{2\,B^2\,d^3\,i^3\,n^2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{b^4\,g^4}$$

Result (type 4, 8160 leaves):

$$\frac{d^3\,i^3\,\text{Log}\,[a+b\,x]\,\left(A+B\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{b^4\,g^4}+\frac{1}{b^4\,g^4\,(a+b\,x)}$$

$$3\left(-A^2\,b\,c\,d^2\,i^3+a\,A^2\,d^3\,i^3-2\,A\,b\,B\,c\,d^2\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+2\,a\,A\,B\,d^3\,i^3\right.$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-b\,B^2\,c\,d^2\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+$$

$$\left.a\,B^2\,d^3\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)-\frac{1}{2\,b^4\,g^4\,(a+b\,x)^2}$$

$$3\left(A^2\,b^2\,c^2\,d\,i^3-2\,a\,A^2\,b\,c\,d^2\,i^3+a^2\,A^2\,d^3\,i^3+2\,A\,b^2\,B\,c^2\,d\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\right.$$

$$4\,a\,A\,b\,B\,c\,d^2\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$2\,a^2\,A\,B\,d^3\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$b^2\,B^2\,c^2\,d\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2-2\,a\,b\,B^2\,c\,d^2\,i^3$$

$$\left.\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2+a^2\,B^2\,d^3\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)+$$

$$\frac{1}{3\,b^4\,g^4\,(a+b\,x)^3}\left(-A^2\,b^3\,c^3\,i^3+3\,a\,A^2\,b^2\,c^2\,d\,i^3-3\,a^2\,A^2\,b\,c\,d^2\,i^3+a^3\,A^2\,d^3\,i^3-\right.$$

$$2\,A\,b^3\,B\,c^3\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$6\,a\,A\,b^2\,B\,c^2\,d\,i^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-$$

$$6\, a^2\, A\, b\, B\, c\, d^2\, i^3 \left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right) + 2\, a^3\, A\, B\, d^3\, i^3$$

$$\left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right) - b^3\, B^2\, c^3\, i^3 \left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right)^2 +$$

$$3\, a\, b^2\, B^2\, c^2\, d\, i^3 \left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right)^2 - 3\, a^2\, b\, B^2\, c\, d^2\, i^3$$

$$\left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right)^2 + a^3\, B^2\, d^3\, i^3 \left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right)^2 \Big) +$$

$$\frac{1}{54\, b\, (b\, c - a\, d)^3\, g^4\, (a + b\, x)^3}\, B^2\, c^3\, i^3\, n^2 \left(-4\, (b\, c - a\, d)^3 + 15\, d\, (b\, c - a\, d)^2\, (a + b\, x) + \right.$$

$$66\, d^2\, (-b\, c + a\, d)\, (a + b\, x)^2 - 66\, d^3\, (a + b\, x)^3\, \text{Log}[a + b\, x] - $$

$$6\, (b\, c - a\, d)\, \left(2\, (b\, c - a\, d)^2 + 3\, d\, (-b\, c + a\, d)\, (a + b\, x) + 6\, d^2\, (a + b\, x)^2 \right) \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] - $$

$$18\, b\, \left(3\, a^2\, d^2\, (c + d\, x) + 3\, a\, b\, d\, (-c^2 + d^2\, x^2) + b^2\, (c^3 + d^3\, x^3) \right) \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right]^2 + $$

$$\left. 66\, d^3\, (a + b\, x)^3\, \text{Log}[c + d\, x] \right) + $$

$$\frac{1}{g^4}\, 2\, B\, c^3\, i^3\, n \left(A + B \left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right) \right)$$

$$\left(-\frac{\left(\frac{a}{b} + x \right) \left(3\, \text{Log}\left[\frac{a}{b} + x \right] + 9\, \text{Log}\left[\frac{a}{b} + x \right]^2 \right)}{27\, (a + b\, x)^4\, \text{Log}\left[\frac{a}{b} + x \right]} - \frac{1}{6\, b} \right.$$

$$\left(-\frac{b^2\, \left(\frac{c}{d} + x \right)^2}{\left(-a + \frac{b\, c}{d} \right)^5 \left(1 - \frac{b\, \left(\frac{c}{d} + x \right)}{-a + \frac{b\, c}{d}} \right)^2} - \frac{4\, b\, \left(\frac{c}{d} + x \right)}{\left(-a + \frac{b\, c}{d} \right)^4 \left(1 - \frac{b\, \left(\frac{c}{d} + x \right)}{-a + \frac{b\, c}{d}} \right)} + \right.$$

$$\left(\frac{2\, b^3\, \left(\frac{c}{d} + x \right)^3}{\left(-a + \frac{b\, c}{d} \right)^6 \left(1 - \frac{b\, \left(\frac{c}{d} + x \right)}{-a + \frac{b\, c}{d}} \right)^3} + \frac{6\, b^2\, \left(\frac{c}{d} + x \right)^2}{\left(-a + \frac{b\, c}{d} \right)^5 \left(1 - \frac{b\, \left(\frac{c}{d} + x \right)}{-a + \frac{b\, c}{d}} \right)^2} + \frac{6\, b\, \left(\frac{c}{d} + x \right)}{\left(-a + \frac{b\, c}{d} \right)^4 \left(1 - \frac{b\, \left(\frac{c}{d} + x \right)}{-a + \frac{b\, c}{d}} \right)} \right) \text{Log}\left[\frac{c}{d} + x \right] + $$

$$\left. \frac{2\, \text{Log}\left[1 - \frac{b\, \left(\frac{c}{d} + x \right)}{-a + \frac{b\, c}{d}} \right]}{\left(-a + \frac{b\, c}{d} \right)^3} \right) - \frac{-\text{Log}\left[\frac{a}{b} + x \right] + \text{Log}\left[\frac{c}{d} + x \right] + \text{Log}\left[\frac{a}{c + d\, x} + \frac{b\, x}{c + d\, x} \right]}{3\, b\, (a + b\, x)^3} \right) + $$

$$\frac{1}{g^4}\, 6\, B\, c^2\, d\, i^3\, n \left(A + B \left(\text{Log}\left[e\, \left(\frac{a + b\, x}{c + d\, x} \right)^n \right] - n\, \text{Log}\left[\frac{a + b\, x}{c + d\, x} \right] \right) \right)$$

$$\left(-\frac{1 + 2 \log\left[\frac{a}{b} + x\right]}{4 b^2 \left(a + b x\right)^2} + \frac{a \left(1 + 3 \log\left[\frac{a}{b} + x\right]\right)}{9 b^2 \left(a + b x\right)^3} + \right.$$

$$\frac{a \left(-\frac{2 \log\left[\frac{c}{d} + x\right]}{(a+b x)^3} + \frac{d \left(\frac{(b c - a d)\,(-b c + 3 a d + 2 b d x)}{(a+b x)^2} + 2 d^2 \log[a+b x] - 2 d^2 \log[c+d x] \right)}{(b c - a d)^3} \right)}{6 b^2} +$$

$$\frac{\log\left[\frac{c}{d} + x\right] + \frac{d\,(a+b x)\,(b c - a d + d\,(a+b x)\,\log[a+b x] - d\,(a+b x)\,\log[c+d x])}{(b c - a d)^2}}{2 b^2 \left(a + b x\right)^2} -$$

$$\left. \frac{\left(a + 3 b x\right) \left(-\log\left[\frac{a}{b} + x\right] + \log\left[\frac{c}{d} + x\right] + \log\left[\frac{a}{c + d x} + \frac{b x}{c + d x}\right] \right)}{6 b^2 \left(a + b x\right)^3} \right) +$$

$$\frac{1}{g^4} 6 B c d^2 i^3 n \left(A + B \left(\log\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \log\left[\frac{a + b x}{c + d x} \right] \right) \right)$$

$$\left(-\frac{1 + \log\left[\frac{a}{b} + x\right]}{b^3 \left(a + b x\right)} + \frac{a \left(1 + 2 \log\left[\frac{a}{b} + x\right]\right)}{2 b^3 \left(a + b x\right)^2} - \frac{a^2 \left(1 + 3 \log\left[\frac{a}{b} + x\right]\right)}{9 b^3 \left(a + b x\right)^3} - \right.$$

$$\frac{\left(-b c + a d\right) \log\left[\frac{c}{d} + x\right] + d\,(a + b x)\,\left(\log[a + b x] - \log[c + d x]\right)}{b^3 \left(b c - a d\right) \left(a + b x\right)} -$$

$$\frac{a^2 \left(-\frac{2 \log\left[\frac{c}{d} + x\right]}{(a+b x)^3} + \frac{d \left(\frac{(b c - a d)\,(-b c + 3 a d + 2 b d x)}{(a+b x)^2} + 2 d^2 \log[a+b x] - 2 d^2 \log[c+d x] \right)}{(b c - a d)^3} \right)}{6 b^3} -$$

$$\frac{a \left(\log\left[\frac{c}{d} + x\right] + \frac{d\,(a+b x)\,(b c - a d + d\,(a+b x)\,\log[a+b x] - d\,(a+b x)\,\log[c+d x])}{(b c - a d)^2} \right)}{b^3 \left(a + b x\right)^2} - \frac{1}{3 b^3 \left(a + b x\right)^3}$$

$$\left. \left(a^2 + 3 a b x + 3 b^2 x^2\right) \left(-\log\left[\frac{a}{b} + x\right] + \log\left[\frac{c}{d} + x\right] + \log\left[\frac{a}{c + d x} + \frac{b x}{c + d x}\right] \right) \right) +$$

$$\frac{1}{g^4} 2 B d^3 i^3 n \left(A + B \left(\log\left[e \left(\frac{a + b x}{c + d x} \right)^n \right] - n \log\left[\frac{a + b x}{c + d x} \right] \right) \right)$$

$$\left(\frac{\text{Log}\left[\frac{a}{b}+x\right]^2}{2\,b^4} + \frac{3\,a\,\left(1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{b^4\,(a+b\,x)} - \frac{3\,a^2\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{4\,b^4\,(a+b\,x)^2} + \frac{a^3\,\left(1+3\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{9\,b^4\,(a+b\,x)^3} + \right.$$

$$\left(3\,a\,\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,\left(\text{Log}[a+b\,x] - \text{Log}[c+d\,x]\right) \right) \right) \Big/$$

$$\left(b^4\,(b\,c-a\,d)\,(a+b\,x) \right) + \frac{a^3\,\left(-\frac{2\,\text{Log}\left[\frac{c}{d}+x\right]}{(a+b\,x)^3} + \frac{d\,\left(\frac{(b\,c-a\,d)\,(-b\,c+3\,a\,d+2\,b\,d\,x)}{(a+b\,x)^2}+2\,d^2\,\text{Log}[a+b\,x]-2\,d^2\,\text{Log}[c+d\,x]\right)}{(b\,c-a\,d)^3} \right)}{6\,b^4} +$$

$$\frac{3\,a^2\,\left(\text{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2} \right)}{2\,b^4\,(a+b\,x)^2} + \frac{1}{6\,b^4}$$

$$\left(\frac{a\,\left(11\,a^2+27\,a\,b\,x+18\,b^2\,x^2\right)}{(a+b\,x)^3} + 6\,\text{Log}[a+b\,x] \right)\,\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \right.$$

$$\left. \text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right] \right) - \frac{\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^4} \Bigg) +$$

$$\frac{1}{g^4}\,3\,B^2\,c\,d^2\,i^3\,n^2\,\left(-\frac{2+2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2}{b^3\,(a+b\,x)} + \frac{a\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{2\,b^3\,(a+b\,x)^2} - \right.$$

$$\frac{a^2\,\left(2+6\,\text{Log}\left[\frac{a}{b}+x\right]+9\,\text{Log}\left[\frac{a}{b}+x\right]^2 \right)}{27\,b^3\,(a+b\,x)^3} +$$

$$2\,\left(-\frac{1+\text{Log}\left[\frac{a}{b}+x\right]}{b^3\,(a+b\,x)} + \frac{a\,\left(1+2\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{2\,b^3\,(a+b\,x)^2} - \frac{a^2\,\left(1+3\,\text{Log}\left[\frac{a}{b}+x\right]\right)}{9\,b^3\,(a+b\,x)^3} \right) -$$

$$\left(\left((-b\,c+a\,d)\,\text{Log}\left[\frac{c}{d}+x\right] + d\,(a+b\,x)\,\left(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\right) \right) \right) \Big/$$

$$\left(b^3\,(b\,c-a\,d)\,(a+b\,x) \right) - \frac{1}{6\,b^3}a^2\,\left(-\frac{2\,\text{Log}\left[\frac{c}{d}+x\right]}{(a+b\,x)^3} + \frac{1}{(b\,c-a\,d)^3} \right.$$

$$d\,\left(\frac{(b\,c-a\,d)\,(-b\,c+3\,a\,d+2\,b\,d\,x)}{(a+b\,x)^2} + 2\,d^2\,\text{Log}[a+b\,x]-2\,d^2\,\text{Log}[c+d\,x] \right) \Bigg) -$$

$$\frac{a\,\left(\text{Log}\left[\frac{c}{d}+x\right] + \frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2} \right)}{b^3\,(a+b\,x)^2} \Bigg)$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right] \right) - \frac{1}{3\,b^3\,(a+b\,x)^3}$$

$$\left(a^2 + 3\,a\,b\,x + 3\,b^2\,x^2\right)\,\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 -$$

$$2\left(\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\left((-b\,c + a\,d)\,\text{Log}\left[\frac{c}{d} + x\right] + d\,(a+b\,x)\,\left(\text{Log}[a+b\,x] - \text{Log}[c + \right.\right.\right.\right.$$

$$\left.\left.\left.d\,x]\right)\right) - 2\,\text{Log}\left[\frac{a}{b} + x\right]\,\left((b\,c - a\,d)\,\text{Log}\left[\frac{c}{d} + x\right] + d\,(a+b\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right) - \right.$$

$$\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c + a\,d}\right]\right) \Big/ \left(2\,b^3\,(b\,c - a\,d)\,(a+b\,x)\right) +$$

$$\left(a\left(-d\,(-b\,c + a\,d)\,(a+b\,x) + (b\,c - a\,d)^2\left(1 + 2\,\text{Log}\left[\frac{a}{b} + x\right]\right)\text{Log}\left[\frac{c}{d} + x\right] + \right.\right.$$

$$d^2\,(a+b\,x)^2\,\text{Log}[a+b\,x] - d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x] +$$

$$d\,(a+b\,x)\left(d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\,(b\,c - a\,d)\left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right) - \right.$$

$$\left.\left.\left.2\,d\,(a+b\,x)\left(\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c + a\,d}\right]\right)\right)\right)\right) \Big/$$

$$\left(2\,b^3\,(b\,c - a\,d)^2\,(a+b\,x)^2\right) + \frac{1}{36\,b^3\,(b\,c - a\,d)^3\,(a+b\,x)^3}\,a^2\left(-2\,d\,(b\,c - a\,d)^2\,(a+b\,x) + \right.$$

$$4\,d^2\,(b\,c - a\,d)\,(a+b\,x)^2 - 4\,(b\,c - a\,d)^3\left(1 + 3\,\text{Log}\left[\frac{a}{b} + x\right]\right)\text{Log}\left[\frac{c}{d} + x\right] + 4\,d^3\,(a+b\,x)^3$$

$$\text{Log}[a+b\,x] - 4\,d^3\,(a+b\,x)^3\,\text{Log}[c+d\,x] + 3\,d\,(a+b\,x)\left(2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 4\right.$$

$$d\,(b\,c - a\,d)\,(a+b\,x)\left(1 + \text{Log}\left[\frac{a}{b} + x\right]\right) - (b\,c - a\,d)^2\left(1 + 2\,\text{Log}\left[\frac{a}{b} + x\right]\right) - 4$$

$$\left.\left.d^2\,(a+b\,x)^2\left(\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c + a\,d}\right]\right)\right)\right) +$$

$$\left(-b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d} + x\right]^2 + 2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] + \right.$$

$$\left.2\,d\,(a+b\,x)\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right) \Big/ \left(b^3\,(b\,c - a\,d)\,(a+b\,x)\right) +$$

$$\left(a\left(b\,(c+d\,x)\,(-2\,a\,d + b\,(c - d\,x))\,\text{Log}\left[\frac{c}{d} + x\right]^2 - 2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right] + \right.\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d} + x\right]\left(b\,(c+d\,x) + d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right]\right) +$$

$$\left.\left.2\,d^2\,(a+b\,x)^2\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)\right) \Big/ \left(b^3\,(b\,c - a\,d)^2\,(a+b\,x)^2\right) +$$

$$\left(a^2\left(-b\left(3\,a^2\,d^2\,(c+d\,x) + 3\,a\,b\,d\,\left(-c^2 + d^2\,x^2\right) + b^2\,\left(c^3 + d^3\,x^3\right)\right)\text{Log}\left[\frac{c}{d} + x\right]^2 - \right.\right.$$

$$d^2\,(a+b\,x)^2\left(b\,(c+d\,x) + 3\,d\,(a+b\,x)\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right]\right) + d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d} + x\right]$$

$$\left(-b\,(c+d\,x)\,(-4\,a\,d + b\,(c - 3\,d\,x)) + 2\,d^2\,(a+b\,x)^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c + a\,d}\right]\right) +$$

$$2\,d^3\,(a+b\,x)^3\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big]\Big)\Big/\Big(3\,b^3\,(b\,c-a\,d)^3\,(a+b\,x)^3\Big)\Big)+$$

$$\frac{1}{g^4}\,3\,B^2\,c^2\,d\,i^3\,n^2\left(-\frac{1+2\,\text{Log}\big[\frac{a}{b}+x\big]+2\,\text{Log}\big[\frac{a}{b}+x\big]^2}{4\,b^2\,(a+b\,x)^2}+\frac{a\,\big(2+6\,\text{Log}\big[\frac{a}{b}+x\big]+9\,\text{Log}\big[\frac{a}{b}+x\big]^2\big)}{27\,b^2\,(a+b\,x)^3}+\right.$$

$$2\left(-\frac{1+2\,\text{Log}\big[\frac{a}{b}+x\big]}{4\,b^2\,(a+b\,x)^2}+\frac{a\,\big(1+3\,\text{Log}\big[\frac{a}{b}+x\big]\big)}{9\,b^2\,(a+b\,x)^3}+\frac{1}{6\,b^2}a\left(-\frac{2\,\text{Log}\big[\frac{c}{d}+x\big]}{(a+b\,x)^3}+\frac{1}{(b\,c-a\,d)^3}\right.\right.$$

$$d\left(\frac{(b\,c-a\,d)\,(-b\,c+3\,a\,d+2\,b\,d\,x)}{(a+b\,x)^2}+2\,d^2\,\text{Log}[a+b\,x]-2\,d^2\,\text{Log}[c+d\,x]\right)\Big)+$$

$$\left.\frac{\text{Log}\big[\frac{c}{d}+x\big]+\frac{d\,(a+b\,x)\,(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-d\,(a+b\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}}{2\,b^2\,(a+b\,x)^2}\right)$$

$$\left(-\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{c}{d}+x\big]+\text{Log}\big[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\big]\right)-$$

$$\frac{(a+3\,b\,x)\,\big(-\text{Log}\big[\frac{a}{b}+x\big]+\text{Log}\big[\frac{c}{d}+x\big]+\text{Log}\big[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\big]\big)^2}{6\,b^2\,(a+b\,x)^3}-$$

$$2\left(-\left(\left(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2\,\big(1+2\,\text{Log}\big[\frac{a}{b}+x\big]\big)\,\text{Log}\big[\frac{c}{d}+x\big]+d^2\,(a+b\,x)^2\right.\right.\right.$$

$$\text{Log}[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x]+d\,(a+b\,x)\left(d\,(a+b\,x)\,\text{Log}\big[\frac{a}{b}+x\big]^2+\right.$$

$$2\,(b\,c-a\,d)\,\big(1+\text{Log}\big[\frac{a}{b}+x\big]\big)-2\,d\,(a+b\,x)\left(\text{Log}\big[\frac{a}{b}+x\big]\,\text{Log}\big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]+\right.$$

$$\left.\left.\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\right)\Big)\Big)\Big/\Big(4\,b^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\Big)\right)-$$

$$\frac{1}{36\,b^2\,(b\,c-a\,d)^3\,(a+b\,x)^3}\,a\left(-2\,d\,(b\,c-a\,d)^2\,(a+b\,x)+4\,d^2\,(b\,c-a\,d)\,(a+b\,x)^2-\right.$$

$$4\,(b\,c-a\,d)^3\,\big(1+3\,\text{Log}\big[\frac{a}{b}+x\big]\big)\,\text{Log}\big[\frac{c}{d}+x\big]+4\,d^3\,(a+b\,x)^3\,\text{Log}[a+b\,x]-$$

$$4\,d^3\,(a+b\,x)^3\,\text{Log}[c+d\,x]+3\,d\,(a+b\,x)\left(2\,d^2\,(a+b\,x)^2\,\text{Log}\big[\frac{a}{b}+x\big]^2+4\,d\right.$$

$$(b\,c-a\,d)\,(a+b\,x)\,\big(1+\text{Log}\big[\frac{a}{b}+x\big]\big)-(b\,c-a\,d)^2\,\big(1+2\,\text{Log}\big[\frac{a}{b}+x\big]\big)-4\,d^2$$

$$\left.\left.\left.\left.(a+b\,x)^2\left(\text{Log}\big[\frac{a}{b}+x\big]\,\text{Log}\big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]+\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\right)\right)\right)\right)\right)-$$

$$\left(b\,(c+d\,x)\,(-2\,a\,d+b\,(c-d\,x))\,\text{Log}\big[\frac{c}{d}+x\big]^2-2\,d^2\,(a+b\,x)^2\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+\right.$$

$$2\,d\,(a+b\,x)\,\text{Log}\big[\frac{c}{d}+x\big]\left(b\,(c+d\,x)+d\,(a+b\,x)\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]\right)+$$

$$2 d^2 (a+b x)^2 \text{PolyLog}\left[2, \frac{b (c+d x)}{b c - a d}\right]\right] \Big/ \left(2 b^2 (b c - a d)^2 (a+b x)^2\right) -$$

$$\left(a \left(-b \left(3 a^2 d^2 (c+d x) + 3 a b d \left(-c^2 + d^2 x^2\right) + b^2 \left(c^3 + d^3 x^3\right)\right) \text{Log}\left[\frac{c}{d} + x\right]^2 - \right.\right.$$

$$d^2 (a+b x)^2 \left(b (c+d x) + 3 d (a+b x) \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right]\right) + d (a+b x) \text{Log}\left[\frac{c}{d} + x\right]$$

$$\left(-b (c+d x) (-4 a d + b (c - 3 d x)) + 2 d^2 (a+b x)^2 \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right]\right) +$$

$$\left.\left. 2 d^3 (a+b x)^3 \text{PolyLog}\left[2, \frac{b (c+d x)}{b c - a d}\right]\right)\right) \Big/ \left(3 b^2 (b c - a d)^3 (a+b x)^3\right)\right) +$$

$$\frac{1}{g^4} B^2 d^3 i^3 n^2 \left(\frac{\text{Log}\left[\frac{a}{b} + x\right]^3}{3 b^4} + \frac{3 a \left(2 + 2 \text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{a}{b} + x\right]^2\right)}{b^4 (a+b x)} - \right.$$

$$\frac{3 a^2 \left(1 + 2 \text{Log}\left[\frac{a}{b} + x\right] + 2 \text{Log}\left[\frac{a}{b} + x\right]^2\right)}{4 b^4 (a+b x)^2} +$$

$$\frac{a^3 \left(2 + 6 \text{Log}\left[\frac{a}{b} + x\right] + 9 \text{Log}\left[\frac{a}{b} + x\right]^2\right)}{27 b^4 (a+b x)^3} + \frac{1}{6 b^4}$$

$$\left(\frac{a \left(11 a^2 + 27 a b x + 18 b^2 x^2\right)}{(a+b x)^3} + 6 \text{Log}[a+b x]\right)$$

$$\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c+d x} + \frac{b x}{c+d x}\right]\right)^2 -$$

$$\left(3 a \left(-b (c+d x) \text{Log}\left[\frac{c}{d} + x\right]^2 + 2 d (a+b x) \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right] + \right.\right.$$

$$\left.\left. 2 d (a+b x) \text{PolyLog}\left[2, \frac{b (c+d x)}{b c - a d}\right]\right)\right) \Big/ \left(b^4 (b c - a d) (a+b x)\right) -$$

$$\left(3 a^2 \left(b (c+d x) (-2 a d + b (c - d x)) \text{Log}\left[\frac{c}{d} + x\right]^2 - 2 d^2 (a+b x)^2 \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right] + \right.\right.$$

$$2 d (a+b x) \text{Log}\left[\frac{c}{d} + x\right] \left(b (c+d x) + d (a+b x) \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right]\right) +$$

$$\left.\left. 2 d^2 (a+b x)^2 \text{PolyLog}\left[2, \frac{b (c+d x)}{b c - a d}\right]\right)\right) \Big/ \left(2 b^4 (b c - a d)^2 (a+b x)^2\right) -$$

$$\left(a^3 \left(-b \left(3 a^2 d^2 (c+d x) + 3 a b d \left(-c^2 + d^2 x^2\right) + b^2 \left(c^3 + d^3 x^3\right)\right) \text{Log}\left[\frac{c}{d} + x\right]^2 - \right.\right.$$

$$d^2 (a+b x)^2 \left(b (c+d x) + 3 d (a+b x) \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right]\right) + d (a+b x) \text{Log}\left[\frac{c}{d} + x\right]$$

$$\left(-b (c+d x) (-4 a d + b (c - 3 d x)) + 2 d^2 (a+b x)^2 \text{Log}\left[\frac{d (a+b x)}{-b c + a d}\right]\right) +$$

$$2\,d^3\,(a+b\,x)^3\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big]\Big)\Big/\Big(3\,b^4\,(b\,c-a\,d)^3\,(a+b\,x)^3\Big)\,+$$

$$2\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\Big]\Big)$$

$$\Bigg(\frac{\text{Log}\big[\frac{a}{b}+x\big]^2}{2\,b^4}+\frac{3\,a\,\big(1+\text{Log}\big[\frac{a}{b}+x\big]\big)}{b^4\,(a+b\,x)}-\frac{3\,a^2\,\big(1+2\,\text{Log}\big[\frac{a}{b}+x\big]\big)}{4\,b^4\,(a+b\,x)^2}+\frac{a^3\,\big(1+3\,\text{Log}\big[\frac{a}{b}+x\big]\big)}{9\,b^4\,(a+b\,x)^3}+$$

$$\Big(3\,a\,\Big((-b\,c+a\,d)\,\text{Log}\Big[\frac{c}{d}+x\Big]+d\,(a+b\,x)\,\big(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\big)\Big)\Big)\Big/$$

$$\Big(b^4\,(b\,c-a\,d)\,(a+b\,x)\Big)+\frac{1}{6\,b^4}a^3\,\Bigg(-\frac{2\,\text{Log}\big[\frac{c}{d}+x\big]}{(a+b\,x)^3}+\frac{1}{(b\,c-a\,d)^3}$$

$$d\,\Bigg(\frac{(b\,c-a\,d)\,(-b\,c+3\,a\,d+2\,b\,d\,x)}{(a+b\,x)^2}+2\,d^2\,\text{Log}[a+b\,x]-2\,d^2\,\text{Log}[c+d\,x]\Bigg)\Bigg)+$$

$$\frac{1}{2\,b^4\,(a+b\,x)^2}3\,a^2\,\Bigg(\text{Log}\Big[\frac{c}{d}+x\Big]+\frac{1}{(b\,c-a\,d)^2}d\,(a+b\,x)\,\big(b\,c-a\,d+d\,(a+b\,x)\,\text{Log}[a+b\,x]-$$

$$d\,(a+b\,x)\,\text{Log}[c+d\,x]\big)\Bigg)-\frac{\text{Log}\big[\frac{c}{d}+x\big]\,\text{Log}\big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\big]+\text{PolyLog}\big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\big]}{b^4}\Bigg)-$$

$$2\,\Bigg(-\Bigg(\Bigg(3\,a\,\Bigg(d\,(a+b\,x)\,\text{Log}\Big[\frac{a}{b}+x\Big]^2+2\,\Big((-b\,c+a\,d)\,\text{Log}\Big[\frac{c}{d}+x\Big]+d\,(a+b\,x)$$

$$\big(\text{Log}[a+b\,x]-\text{Log}[c+d\,x]\big)\Big)-2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\Bigg((b\,c-a\,d)\,\text{Log}\Big[\frac{c}{d}+x\Big]+$$

$$d\,(a+b\,x)\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Bigg)-2\,d\,(a+b\,x)\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Bigg)\Bigg)\Big/$$

$$\Big(2\,b^4\,(b\,c-a\,d)\,(a+b\,x)\Big)\Bigg)-\Bigg(3\,a^2\,\Bigg(-d\,(-b\,c+a\,d)\,(a+b\,x)+(b\,c-a\,d)^2$$

$$\Big(1+2\,\text{Log}\Big[\frac{a}{b}+x\Big]\Big)\,\text{Log}\Big[\frac{c}{d}+x\Big]+d^2\,(a+b\,x)^2\,\text{Log}[a+b\,x]-d^2\,(a+b\,x)^2\,\text{Log}[c+d\,x]+$$

$$d\,(a+b\,x)\,\Bigg(d\,(a+b\,x)\,\text{Log}\Big[\frac{a}{b}+x\Big]^2+2\,(b\,c-a\,d)\,\Big(1+\text{Log}\Big[\frac{a}{b}+x\Big]\Big)-$$

$$2\,d\,(a+b\,x)\,\Bigg(\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Bigg)\Bigg)\Bigg)\Bigg)\Big/$$

$$\Big(4\,b^4\,(b\,c-a\,d)^2\,(a+b\,x)^2\Big)-\frac{1}{36\,b^4\,(b\,c-a\,d)^3\,(a+b\,x)^3}a^3\,\Bigg(-2\,d\,(b\,c-a\,d)^2\,(a+b\,x)+$$

$$4\,d^2\,(b\,c-a\,d)\,(a+b\,x)^2-4\,(b\,c-a\,d)^3\,\Big(1+3\,\text{Log}\Big[\frac{a}{b}+x\Big]\Big)\,\text{Log}\Big[\frac{c}{d}+x\Big]+4\,d^3\,(a+b\,x)^3$$

$$\text{Log}[a+b\,x]-4\,d^3\,(a+b\,x)^3\,\text{Log}[c+d\,x]+3\,d\,(a+b\,x)\,\Bigg(2\,d^2\,(a+b\,x)^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2+4$$

$$d\,(b\,c-a\,d)\,(a+b\,x)\,\Big(1+\text{Log}\Big[\frac{a}{b}+x\Big]\Big)-(b\,c-a\,d)^2\,\Big(1+2\,\text{Log}\Big[\frac{a}{b}+x\Big]\Big)-4\,d^2$$

$$(a + b x)^2 \left(\text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b (c + d x)}{b c - a d}\right] + \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] \right) \right) + \frac{1}{2 b^4}$$

$$\left(\text{Log}\left[\frac{a}{b} + x\right]^2 \left(\text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{b (c + d x)}{b c - a d}\right] \right) - 2 \text{Log}\left[\frac{a}{b} + x\right] \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] + $$

$$2 \text{PolyLog}\left[3, \frac{d (a + b x)}{-b c + a d}\right] \right) + \frac{1}{b^4}$$

$$\left(\text{Log}\left[\frac{c}{d} + x\right]^2 \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] + 2 \text{Log}\left[\frac{c}{d} + x\right] \text{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right] - $$

$$2 \text{PolyLog}\left[3, \frac{b (c + d x)}{b c - a d}\right] \right) \right)$$

Problem 186: Result more than twice size of optimal antiderivative.

$$\int \frac{(a g + b g x)^3 \left(A + B \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{c i + d i x} \, dx$$

Optimal (type 4, 768 leaves, 25 steps):

$$\frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,x}{3\,d^3\,i} + \frac{7\,B\,(b\,c-a\,d)^2\,g^3\,n\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{3\,d^3\,i} -$$

$$\frac{b^2\,B\,(b\,c-a\,d)\,g^3\,n\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{3\,d^4\,i} +$$

$$\frac{3\,(b\,c-a\,d)^2\,g^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^3\,i} -$$

$$\frac{3\,b^2\,(b\,c-a\,d)\,g^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,d^4\,i} + \frac{b^3\,g^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,d^4\,i} +$$

$$\frac{6\,B\,(b\,c-a\,d)^3\,g^3\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^4\,i} +$$

$$\frac{(b\,c-a\,d)^3\,g^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^4\,i} + \frac{B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{3\,d^4\,i} -$$

$$\frac{2\,B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,\text{Log}\,[c+d\,x]}{d^4\,i} - \frac{7\,B\,(b\,c-a\,d)^3\,g^3\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{3\,d^4\,i} +$$

$$\frac{6\,B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i} +$$

$$\frac{2\,B\,(b\,c-a\,d)^3\,g^3\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i} +$$

$$\frac{7\,B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{3\,d^4\,i} - \frac{2\,B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i}$$

Result (type 4, 4914 leaves):

$$\frac{1}{12\,d^4\,i}\,g^3\,\left(12\,b\,d\,(b^2\,c^2-3\,a\,b\,c\,d+3\,a^2\,d^2)\,x\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 - \right.$$

$$6\,b^2\,d^2\,(b\,c-3\,a\,d)\,x^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 +$$

$$4\,b^3\,d^3\,x^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 -$$

$$12\,(b\,c-a\,d)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\,\text{Log}\,[c+d\,x] +$$

$$36\,a\,B\,d\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-2\,b^2\,c^2+2\,a\,b\,c\,d-b^2\,c\,d\,x+a\,b\,d^2\,x+2\,b^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]-b^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 - \right.$$

$$a^2\,d^2\,\text{Log}\,[a+b\,x]-2\,b^2\,c\,d\,x\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+b^2\,d^2\,x^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+b^2\,c^2\,\text{Log}\,[c+d\,x] +$$

$$2\,b^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\,[c+d\,x]+2\,b^2\,c^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\,\text{Log}\,[c+d\,x]-2\,b\,c\,\text{Log}\left[\frac{a}{b}+x\right]$$

$$\left(a\,d + b\,c\,\text{Log}[c + d\,x] - b\,c\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\right) + 2\,b^2\,c^2\,\text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\right) +$$

$$4\,B\,n\,\left(A + B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] - B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\right)\left(6\,b^3\,c^3 - 6\,a\,b^2\,c^2\,d + 5\,b^3\,c^2\,d\,x - \right.$$

$$3\,a\,b^2\,c\,d^2\,x - 2\,a^2\,b\,d^3\,x - b^3\,c\,d^2\,x^2 + a\,b^2\,d^3\,x^2 - 6\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d} + x\Big] + 3\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d} + x\Big]^2 +$$

$$3\,a^2\,b\,c\,d^2\,\text{Log}[a + b\,x] + 2\,a^3\,d^3\,\text{Log}[a + b\,x] + 6\,b^3\,c^2\,d\,x\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] -$$

$$3\,b^3\,c\,d^2\,x^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] + 2\,b^3\,d^3\,x^3\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] - 5\,b^3\,c^3\,\text{Log}[c + d\,x] -$$

$$6\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d} + x\Big]\,\text{Log}[c + d\,x] - 6\,b^3\,c^3\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\,\text{Log}[c + d\,x] + 6\,b^2\,c^2\,\text{Log}\Big[\frac{a}{b} + x\Big]$$

$$\left(a\,d + b\,c\,\text{Log}[c + d\,x] - b\,c\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\right) - 6\,b^3\,c^3\,\text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\right) -$$

$$12\,a^3\,B\,d^3\,n\,\left(A + B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] - B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\right)$$

$$\left(\text{Log}\Big[\frac{c}{d} + x\Big]^2 + 2\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big] - \text{Log}\Big[\frac{c}{d} + x\Big] - \text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\,\text{Log}[c + d\,x] -$$

$$2\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] + \text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big)\right) -$$

$$36\,a^2\,B\,d^2\,n\,\left(A + B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] - B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\right)$$

$$\left(-2\,d\,(a + b\,x)\,\Big(-1 + \text{Log}\Big[\frac{a}{b} + x\Big]\Big) + 2\,b\,(c + d\,x)\,\Big(-1 + \text{Log}\Big[\frac{c}{d} + x\Big]\Big) - b\,c\,\text{Log}\Big[\frac{c}{d} + x\Big]^2 +$$

$$2\,b\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big] - \text{Log}\Big[\frac{c}{d} + x\Big] - \text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\,(d\,x - c\,\text{Log}[c + d\,x]) +$$

$$2\,b\,c\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] + \text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big)\right) +$$

$$4\,a^3\,B^2\,d^3\,n^2\,\left(\text{Log}\Big[\frac{c}{d} + x\Big]^3 + 3\,\text{Log}\Big[\frac{c}{d} + x\Big]^2\,\Big(-\text{Log}\Big[\frac{a}{b} + x\Big] + \text{Log}\Big[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big) +$$

$$3\,\Big(-\text{Log}\Big[\frac{a}{b} + x\Big] + \text{Log}\Big[\frac{c}{d} + x\Big] + \text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)^2\,\text{Log}[c + d\,x] + 3\,\text{Log}\Big[\frac{a}{b} + x\Big]^2\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] +$$

$$6\,\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] + 3\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big] - \text{Log}\Big[\frac{c}{d} + x\Big] - \text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)$$

$$\left(\text{Log}\Big[\frac{c}{d} + x\Big]^2 - 2\,\Big(\text{Log}\Big[\frac{a}{b} + x\Big]\,\text{Log}\Big[\frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] + \text{PolyLog}\Big[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big]\Big)\right) + 6\,\text{Log}\Big[\frac{c}{d} + x\Big]$$

$$\text{PolyLog}\Big[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big] - 6\,\text{PolyLog}\Big[3, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\Big] - 6\,\text{PolyLog}\Big[3, \frac{b\,(c + d\,x)}{b\,c - a\,d}\Big]\right) +$$

$$B^2\,n^2\,\left(45\,b^3\,c^3 - 20\,a\,b^2\,c^2\,d + 21\,a^2\,b\,c\,d^2 + 4\,b^3\,c^2\,d\,x - 8\,a\,b^2\,c\,d^2\,x + 4\,a^2\,b\,d^3\,x - \right.$$

$$24\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b} + x\Big] + 44\,a\,b^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b} + x\Big] - 18\,a^2\,b\,c\,d^2\,\text{Log}\Big[\frac{a}{b} + x\Big] -$$

$$12\,a\,b^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 + 6\,a^2\,b\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 + 4\,a^3\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 - 18\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big] -$$

$$24\,a\,b^2\,c^2\,d\,\text{Log}\Big[\frac{c}{d}+x\Big] + 24\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big] - 12\,a^2\,b\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big] -$$

$$8\,a^3\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big] - 2\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 + 8\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^3 +$$

$$10\,a^2\,b\,c\,d^2\,\text{Log}[a+b\,x] - 12\,a^3\,d^3\,\text{Log}[a+b\,x] - 12\,a^2\,b\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x] -$$

$$8\,a^3\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x] + 12\,a^2\,b\,c\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x] +$$

$$8\,a^3\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x] - 12\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 24\,b^3\,c^3\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] -$$

$$24\,a\,b^2\,c^2\,d\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + 20\,b^3\,c^2\,d\,x\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] - 12\,a\,b^2\,c\,d^2\,x\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] -$$

$$8\,a^2\,b\,d^3\,x\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] - 4\,b^3\,c\,d^2\,x^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + 4\,a\,b^2\,d^3\,x^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] +$$

$$24\,a\,b^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] - 24\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] +$$

$$12\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + 12\,a^2\,b\,c\,d^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] +$$

$$8\,a^3\,d^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + 12\,b^3\,c^2\,d\,x\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 -$$

$$6\,b^3\,c\,d^2\,x^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 + 4\,b^3\,d^3\,x^3\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 + 18\,b^3\,c^3\,\text{Log}[c+d\,x] +$$

$$16\,a\,b^2\,c^2\,d\,\text{Log}[c+d\,x] + 8\,a^2\,b\,c\,d^2\,\text{Log}[c+d\,x] + 20\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x] -$$

$$12\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}[c+d\,x] - 20\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] +$$

$$24\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x] - 12\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2\,\text{Log}[c+d\,x] -$$

$$20\,b^3\,c^3\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\text{Log}[c+d\,x] + 24\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\text{Log}[c+d\,x] -$$

$$24\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\text{Log}[c+d\,x] - 12\,b^3\,c^3\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2\,\text{Log}[c+d\,x] -$$

$$44\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 24\,a\,b^2\,c^2\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$12\,a^2\,b\,c\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 8\,a^3\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$12\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 24\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$24\,b^3\,c^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$4\,\Big(11\,b^3\,c^3 - 6\,a\,b^2\,c^2\,d - 3\,a^2\,b\,c\,d^2 - 2\,a^3\,d^3 + 6\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big] + 6\,b^3\,c^3\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)$$

$$\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - 24\,b^3\,c^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$

$$24\,b^3\,c^3\,\text{PolyLog}\Big[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 24\,b^3\,c^3\,\text{PolyLog}\Big[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big) +$$

$$12\,a^2\,B^2\,d^2\,n^2\,\Big(3\,d\,(a+b\,x)\,\Big(2-2\,\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{a}{b}+x\Big]^2\Big) - b\,c\,\text{Log}\Big[\frac{c}{d}+x\Big]^3 +$$

$$3\,b\,(c+d\,x)\,\Big(2-2\,\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]^2\Big) +$$

$$3\,b\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)^2\,(d\,x-c\,\text{Log}[c+d\,x]) -$$

$$6\,\Big(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\Big[\frac{c}{d}+x\Big]-b\,c\,\text{Log}[c+d\,x] +$$

$$\text{Log}\Big[\frac{a}{b}+x\Big]\,\Big(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\Big[\frac{c}{d}+x\Big]+(b\,c-a\,d)\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big) +$$

$$(b\,c-a\,d)\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big) + 3\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]-\text{Log}\Big[\frac{c}{d}+x\Big]-\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)$$

$$\Big(-2\,d\,(a+b\,x)\,\Big(-1+\text{Log}\Big[\frac{a}{b}+x\Big]\Big)+2\,b\,(c+d\,x)\,\Big(-1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big) - b\,c\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 +$$

$$2\,b\,c\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)\Big) -$$

$$3\,b\,c\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] -$$

$$2\,\text{PolyLog}\Big[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big) + 3\,b\,c\,\Big(\text{Log}\Big[\frac{c}{d}+x\Big]^2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]-\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big) -$$

$$2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+2\,\text{PolyLog}\Big[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big) -$$

$$3\,a\,B^2\,d\,n^2\,\Big(12\,b\,c\,d\,(a+b\,x)\,\Big(2-2\,\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{a}{b}+x\Big]^2\Big) +$$

$$3\,d^2\,(a+b\,x)\,\Big(7\,a-b\,x+(-6\,a+2\,b\,x)\,\text{Log}\Big[\frac{a}{b}+x\Big]+2\,(a-b\,x)\,\text{Log}\Big[\frac{a}{b}+x\Big]^2\Big) -$$

$$4\,b^2\,c^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^3 + 12\,b^2\,c\,(c+d\,x)\,\Big(2-2\,\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]^2\Big) +$$

$$3\,b^2\,(c+d\,x)\,\Big(7\,c-d\,x+(-6\,c+2\,d\,x)\,\text{Log}\Big[\frac{c}{d}+x\Big]+2\,(c-d\,x)\,\text{Log}\Big[\frac{c}{d}+x\Big]^2\Big) -$$

$$6\,b^2\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)^2\,(d\,x\,(-2\,c+d\,x)+2\,c^2\,\text{Log}[c+d\,x]) +$$

$$6\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]-\text{Log}\Big[\frac{c}{d}+x\Big]-\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)$$

$$\Big(-4\,b\,c\,d\,(a+b\,x)\,\Big(-1+\text{Log}\Big[\frac{a}{b}+x\Big]\Big)+4\,b^2\,c\,(c+d\,x)\,\Big(-1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big) -$$

$$2\,b^2\,c^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^2 + d^2\,\Big(b\,x\,(2\,a-b\,x)+2\,b^2\,x^2\,\text{Log}\Big[\frac{a}{b}+x\Big]-2\,a^2\,\text{Log}[a+b\,x]\Big) +$$

$$b^2\,\Big(d\,x\,(-2\,c+d\,x)-2\,d^2\,x^2\,\text{Log}\Big[\frac{c}{d}+x\Big]+2\,c^2\,\text{Log}[c+d\,x]\Big) +$$

$$4\,b^2\,c^2\,\left(\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)-$$

$$12\,b^2\,c^2\,\left(\mathrm{Log}\left[\frac{a}{b}+x\right]^2\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-\right.$$

$$\left.2\,\mathrm{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-6\,\left(2\,a\,b\,c\,d+3\,b^2\,c\,d\,x+3\,a\,b\,d^2\,x-b^2\,d^2\,x^2-\right.$$

$$2\,a\,b\,d^2\,x\,\mathrm{Log}\left[\frac{c}{d}+x\right]+b^2\,d^2\,x^2\,\mathrm{Log}\left[\frac{c}{d}+x\right]-a^2\,d^2\,\mathrm{Log}\left[a+b\,x\right]-b^2\,c^2\,\mathrm{Log}\left[c+d\,x\right]-2\,a\,b\,c$$

$$d\,\mathrm{Log}\left[c+d\,x\right]-\mathrm{Log}\left[\frac{a}{b}+x\right]\,\left(b\,d\,\left(2\,a\,c+b\,x\,\left(2\,c-d\,x\right)\right)-2\,d^2\,\left(a^2-b^2\,x^2\right)\,\mathrm{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\left(-2\,b^2\,c^2+2\,a^2\,d^2\right)\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+2\,\left(b^2\,c^2-a^2\,d^2\right)\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$

$$4\,b\,c\,\left(a\,d+2\,b\,d\,x-b\,d\,x\,\mathrm{Log}\left[\frac{c}{d}+x\right]-b\,c\,\mathrm{Log}\left[c+d\,x\right]+\mathrm{Log}\left[\frac{a}{b}+x\right]\right.$$

$$\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\mathrm{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+(b\,c-a\,d)$$

$$\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,b^2\,c^2\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]^2\,\left(\mathrm{Log}\left[\frac{a}{b}+x\right]-\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-\right.$$

$$\left.\left.\left.2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,\mathrm{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)\right)$$

Problem 187: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g+b\,g\,x)^2\,\left(A+B\,\mathrm{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{c\,i+d\,i\,x}\,dx$$

Optimal (type 4, 573 leaves, 15 steps):

$$- \frac{B\,(b\,c - a\,d)\,g^2\,n\,(a + b\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{d^2\,i} - \frac{2\,(b\,c - a\,d)\,g^2\,(a + b\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^2\,i} +$$

$$\frac{b^2\,g^2\,(c + d\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,d^3\,i} - \frac{4\,B\,(b\,c - a\,d)^2\,g^2\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^3\,i} -$$

$$\frac{(b\,c - a\,d)^2\,g^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^3\,i} + \frac{B^2\,(b\,c - a\,d)^2\,g^2\,n^2\,\text{Log}[c + d\,x]}{d^3\,i} +$$

$$\frac{B\,(b\,c - a\,d)^2\,g^2\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1 - \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{d^3\,i} -$$

$$\frac{4\,B^2\,(b\,c - a\,d)^2\,g^2\,n^2\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^3\,i} -$$

$$\frac{2\,B\,(b\,c - a\,d)^2\,g^2\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^3\,i} -$$

$$\frac{B^2\,(b\,c - a\,d)^2\,g^2\,n^2\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{d^3\,i} + \frac{2\,B^2\,(b\,c - a\,d)^2\,g^2\,n^2\,\text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^3\,i}$$

Result (type 4, 2797 leaves) :

$$\frac{1}{12\,d^3\,i}\,g^2\,\left(-12\,b\,d\,(b\,c - 2\,a\,d)\,x\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 +$$

$$6\,b^2\,d^2\,x^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 +$$

$$12\,(b\,c - a\,d)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\,\text{Log}[c + d\,x] +$$

$$12\,B\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-2\,b^2\,c^2 + 2\,a\,b\,c\,d - b^2\,c\,d\,x + a\,b\,d^2\,x + 2\,b^2\,c^2\,\text{Log}\left[\frac{c}{d} + x\right] - b^2\,c^2\,\text{Log}\left[\frac{c}{d} + x\right]^2 -$$

$$a^2\,d^2\,\text{Log}[a + b\,x] - 2\,b^2\,c\,d\,x\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + b^2\,d^2\,x^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + b^2\,c^2\,\text{Log}[c + d\,x] +$$

$$2\,b^2\,c^2\,\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}[c + d\,x] + 2\,b^2\,c^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\,\text{Log}[c + d\,x] - 2\,b\,c\,\text{Log}\left[\frac{a}{b} + x\right]$$

$$\left(a\,d + b\,c\,\text{Log}[c + d\,x] - b\,c\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right) + 2\,b^2\,c^2\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) -$$

$$12\,a^2\,B\,d^2\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(\text{Log}\left[\frac{c}{d} + x\right]^2 + 2\,\left(\text{Log}\left[\frac{a}{b} + x\right] - \text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\,\text{Log}[c + d\,x] -$$

$$2\,\left(\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) -$$

$$24\,a\,B\,d\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-2d\,(a+bx)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)+2b\,(c+dx)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)-bc\,\text{Log}\left[\frac{c}{d}+x\right]^2+\right.$$

$$2b\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)(dx-c\,\text{Log}[c+dx])+$$

$$2bc\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]+\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]\right)\right)+$$

$$4a^2B^2d^2n^2\left(\text{Log}\left[\frac{c}{d}+x\right]^3+3\,\text{Log}\left[\frac{c}{d}+x\right]^2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,(a+bx)}{-bc+ad}\right]\right)+\right.$$

$$3\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)^2\text{Log}[c+dx]+3\,\text{Log}\left[\frac{a}{b}+x\right]^2\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]+$$

$$6\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]+3\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^2-2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]+\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]\right)\right)+6\,\text{Log}\left[\frac{c}{d}+x\right]$$

$$\text{PolyLog}\left[2,\frac{b\,(c+dx)}{bc-ad}\right]-6\,\text{PolyLog}\left[3,\frac{d\,(a+bx)}{-bc+ad}\right]-6\,\text{PolyLog}\left[3,\frac{b\,(c+dx)}{bc-ad}\right]\right)+$$

$$8aB^2dn^2\left(3d\,(a+bx)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)-bc\,\text{Log}\left[\frac{c}{d}+x\right]^3+3b\,(c+dx)\right.$$

$$\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)+3b\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)^2$$

$$(dx-c\,\text{Log}[c+dx])-6\left(ad+2bdx-bdx\,\text{Log}\left[\frac{c}{d}+x\right]-bc\,\text{Log}[c+dx]+\right.$$

$$\text{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+bx)+d\,(a+bx)\,\text{Log}\left[\frac{c}{d}+x\right]+(bc-ad)\,\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]\right)+$$

$$(bc-ad)\,\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]\right)+3\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)$$

$$\left(-2d\,(a+bx)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)+2b\,(c+dx)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)-bc\,\text{Log}\left[\frac{c}{d}+x\right]^2+\right.$$

$$2bc\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]+\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]\right)\right)-$$

$$3bc\left(\text{Log}\left[\frac{a}{b}+x\right]^2\text{Log}\left[\frac{b\,(c+dx)}{bc-ad}\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+bx)}{-bc+ad}\right]-\right.$$

$$2\,\text{PolyLog}\left[3,\frac{d\,(a+bx)}{-bc+ad}\right]\right)+3bc\left(\text{Log}\left[\frac{c}{d}+x\right]^2\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{d\,(a+bx)}{-bc+ad}\right]\right)-\right.$$

$$2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\,(c+dx)}{bc-ad}\right]+2\,\text{PolyLog}\left[3,\frac{b\,(c+dx)}{bc-ad}\right]\right)\right)-$$

$$B^2n^2\left(12bcd\,(a+bx)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)+3d^2\,(a+bx)\right.$$

$$\left(7a-bx+(-6a+2bx)\,\text{Log}\left[\frac{a}{b}+x\right]+2(a-bx)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right)-$$

$$4b^2c^2\,\text{Log}\left[\frac{c}{d}+x\right]^3+12b^2c\,(c+dx)\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

$$3 b^2 (c + d x) \left(7 c - d x + (-6 c + 2 d x) \operatorname{Log}\left[\frac{c}{d} + x\right] + 2 (c - d x) \operatorname{Log}\left[\frac{c}{d} + x\right]^2\right) -$$

$$6 b^2 \left(-\operatorname{Log}\left[\frac{a}{b} + x\right] + \operatorname{Log}\left[\frac{c}{d} + x\right] + \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 \left(d x (-2 c + d x) + 2 c^2 \operatorname{Log}[c + d x]\right) +$$

$$6 \left(\operatorname{Log}\left[\frac{a}{b} + x\right] - \operatorname{Log}\left[\frac{c}{d} + x\right] - \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)$$

$$\left(-4 b c d (a + b x) \left(-1 + \operatorname{Log}\left[\frac{a}{b} + x\right]\right) + 4 b^2 c (c + d x) \left(-1 + \operatorname{Log}\left[\frac{c}{d} + x\right]\right) - \right.$$

$$2 b^2 c^2 \operatorname{Log}\left[\frac{c}{d} + x\right]^2 + d^2 \left(b x (2 a - b x) + 2 b^2 x^2 \operatorname{Log}\left[\frac{a}{b} + x\right] - 2 a^2 \operatorname{Log}[a + b x]\right) +$$

$$b^2 \left(d x (-2 c + d x) - 2 d^2 x^2 \operatorname{Log}\left[\frac{c}{d} + x\right] + 2 c^2 \operatorname{Log}[c + d x]\right) +$$

$$4 b^2 c^2 \left(\operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{b (c + d x)}{b c - a d}\right] + \operatorname{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right)\right) -$$

$$12 b^2 c^2 \left(\operatorname{Log}\left[\frac{a}{b} + x\right]^2 \operatorname{Log}\left[\frac{b (c + d x)}{b c - a d}\right] + 2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] - \right.$$

$$\left. 2 \operatorname{PolyLog}\left[3, \frac{d (a + b x)}{-b c + a d}\right]\right) - 6 \left(2 a b c d + 3 b^2 c d x + 3 a b d^2 x - b^2 d^2 x^2 - \right.$$

$$2 a b d^2 x \operatorname{Log}\left[\frac{c}{d} + x\right] + b^2 d^2 x^2 \operatorname{Log}\left[\frac{c}{d} + x\right] - a^2 d^2 \operatorname{Log}[a + b x] - b^2 c^2 \operatorname{Log}[c + d x] - 2 a b c$$

$$d \operatorname{Log}[c + d x] - \operatorname{Log}\left[\frac{a}{b} + x\right] \left(b d (2 a c + b x (2 c - d x)) - 2 d^2 (a^2 - b^2 x^2) \operatorname{Log}\left[\frac{c}{d} + x\right] + \right.$$

$$\left. (-2 b^2 c^2 + 2 a^2 d^2) \operatorname{Log}\left[\frac{b (c + d x)}{b c - a d}\right]\right) + 2 (b^2 c^2 - a^2 d^2) \operatorname{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] +$$

$$4 b c \left(a d + 2 b d x - b d x \operatorname{Log}\left[\frac{c}{d} + x\right] - b c \operatorname{Log}[c + d x] + \operatorname{Log}\left[\frac{a}{b} + x\right]\right.$$

$$\left(-d (a + b x) + d (a + b x) \operatorname{Log}\left[\frac{c}{d} + x\right] + (b c - a d) \operatorname{Log}\left[\frac{b (c + d x)}{b c - a d}\right]\right) + (b c - a d)$$

$$\operatorname{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right) - 2 b^2 c^2 \left(\operatorname{Log}\left[\frac{c}{d} + x\right]^2 \left(\operatorname{Log}\left[\frac{a}{b} + x\right] - \operatorname{Log}\left[\frac{d (a + b x)}{-b c + a d}\right]\right) - \right.$$

$$\left.\left.\left.\left. 2 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right] + 2 \operatorname{PolyLog}\left[3, \frac{b (c + d x)}{b c - a d}\right]\right)\right)\right)\right)$$

Problem 188: Result more than twice size of optimal antiderivative.

$$\int \frac{(a g + b g x) \left(A + B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right]\right)^2}{c i + d i x} \, dx$$

Optimal (type 4, 303 leaves, 9 steps):

$$\frac{g\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+bx}{c+dx}\right)^{n}\right]\right)^{2}}{d\,i}+\frac{2\,B\,(b\,c-a\,d)\,g\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+bx}{c+dx}\right)^{n}\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^{2}\,i}+$$

$$\frac{(b\,c-a\,d)\,g\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+bx}{c+dx}\right)^{n}\right]\right)^{2}\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^{2}\,i}+\frac{2\,B^{2}\,(b\,c-a\,d)\,g\,n^{2}\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^{2}\,i}+$$

$$\frac{2\,B\,(b\,c-a\,d)\,g\,n\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+bx}{c+dx}\right)^{n}\right]\right)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^{2}\,i}-$$

$$\frac{2\,B^{2}\,(b\,c-a\,d)\,g\,n^{2}\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^{2}\,i}$$

Result (type 4, 1367 leaves):

$$\frac{1}{3\,d^{2}\,i}\,g\left(3\,b\,d\,x\left(A+B\,\text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^{n}\right]-B\,n\,\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)^{2}-\right.$$

$$3\,(b\,c-a\,d)\left(A+B\,\text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^{n}\right]-B\,n\,\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)^{2}\text{Log}[c+d\,x]-$$

$$3\,a\,B\,d\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^{n}\right]-B\,n\,\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^{2}+2\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)\text{Log}[c+d\,x]-\right.$$

$$\left.2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)-$$

$$3\,B\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+bx}{c+dx}\right)^{n}\right]-B\,n\,\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)$$

$$\left(-2\,d\,(a+b\,x)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)+2\,b\,(c+d\,x)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)-b\,c\,\text{Log}\left[\frac{c}{d}+x\right]^{2}+\right.$$

$$2\,b\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)\left(d\,x-c\,\text{Log}[c+d\,x]\right)+$$

$$\left.2\,b\,c\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)+$$

$$a\,B^{2}\,d\,n^{2}\left(\text{Log}\left[\frac{c}{d}+x\right]^{3}+3\,\text{Log}\left[\frac{c}{d}+x\right]^{2}\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\right.$$

$$3\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)^{2}\text{Log}[c+d\,x]+3\,\text{Log}\left[\frac{a}{b}+x\right]^{2}\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$

$$6\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+3\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+bx}{c+dx}\right]\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^{2}-2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)+6\,\text{Log}\left[\frac{c}{d}+x\right]$$

$$\left.\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-6\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-6\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$B^{2}\,n^{2}\left(3\,d\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^{2}\right)-b\,c\,\text{Log}\left[\frac{c}{d}+x\right]^{3}+3\,b\,(c+d\,x)\right.$$

$$\left(2 - 2\,\text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{c}{d} + x\right]^2\right) + 3\,b\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)^2$$

$$\left(d\,x - c\,\text{Log}[c + d\,x]\right) - 6\left(a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\left[\frac{c}{d} + x\right] - b\,c\,\text{Log}[c + d\,x] + \right.$$

$$\text{Log}\left[\frac{a}{b} + x\right]\left(-d\,(a + b\,x) + d\,(a + b\,x)\,\text{Log}\left[\frac{c}{d} + x\right] + (b\,c - a\,d)\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right) +$$

$$\left.(b\,c - a\,d)\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right) + 3\left(\text{Log}\left[\frac{a}{b} + x\right] - \text{Log}\left[\frac{c}{d} + x\right] - \text{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)$$

$$\left(-2\,d\,(a + b\,x)\left(-1 + \text{Log}\left[\frac{a}{b} + x\right]\right) + 2\,b\,(c + d\,x)\left(-1 + \text{Log}\left[\frac{c}{d} + x\right]\right) - b\,c\,\text{Log}\left[\frac{c}{d} + x\right]^2 + \right.$$

$$\left.2\,b\,c\left(\text{Log}\left[\frac{a}{b} + x\right]\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right)\right) -$$

$$3\,b\,c\left(\text{Log}\left[\frac{a}{b} + x\right]^2\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + 2\,\text{Log}\left[\frac{a}{b} + x\right]\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] - \right.$$

$$\left.2\,\text{PolyLog}\left[3, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right) + 3\,b\,c\left(\text{Log}\left[\frac{c}{d} + x\right]^2\left(\text{Log}\left[\frac{a}{b} + x\right] - \text{Log}\left[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right) - \right.$$

$$\left.2\,\text{Log}\left[\frac{c}{d} + x\right]\text{PolyLog}\left[2, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + 2\,\text{PolyLog}\left[3, \frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right)\right)\right)$$

Problem 189: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B\,\text{Log}\left[e\left(\frac{a + b\,x}{c + d\,x}\right)^n\right]\right)^2}{c\,i + d\,i\,x}\,dx$$

Optimal (type 4, 137 leaves, 4 steps):

$$-\frac{\left(A + B\,\text{Log}\left[e\left(\frac{a + b\,x}{c + d\,x}\right)^n\right]\right)^2\,\text{Log}\left[\frac{b\,c - a\,d}{b\,(c + d\,x)}\right]}{d\,i} -$$

$$\frac{2\,B\,n\left(A + B\,\text{Log}\left[e\left(\frac{a + b\,x}{c + d\,x}\right)^n\right]\right)\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{b\,(c + d\,x)}\right]}{d\,i} + \frac{2\,B^2\,n^2\,\text{PolyLog}\left[3, \frac{d\,(a + b\,x)}{b\,(c + d\,x)}\right]}{d\,i}$$

Result (type 4, 537 leaves):

$$\frac{1}{3\,d\,i}\left(3\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^{2}\text{Log}[c+d\,x] - \right.$$

$$3\,B\,n\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^{2} + 2\left(\text{Log}\left[\frac{a}{b}+x\right] - \text{Log}\left[\frac{c}{d}+x\right] - \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\text{Log}[c+d\,x] - \right.$$

$$\left.2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) + $$

$$B^{2}\,n^{2}\left(\text{Log}\left[\frac{c}{d}+x\right]^{3} + 3\,\text{Log}\left[\frac{c}{d}+x\right]^{2}\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) + \right.$$

$$3\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^{2}\text{Log}[c+d\,x] + 3\,\text{Log}\left[\frac{a}{b}+x\right]^{2}\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + $$

$$6\,\text{Log}\left[\frac{a}{b}+x\right]\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 3\left(\text{Log}\left[\frac{a}{b}+x\right] - \text{Log}\left[\frac{c}{d}+x\right] - \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^{2} - 2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) + 6\,\text{Log}\left[\frac{c}{d}+x\right]$$

$$\left.\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] - 6\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 6\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)$$

Problem 191: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{2}}{(a\,g+b\,g\,x)^{2}\,(c\,i+d\,i\,x)}\,dx$$

Optimal (type 3, 199 leaves, 7 steps):

$$-\frac{2\,b\,B^{2}\,n^{2}\,(c+d\,x)}{(b\,c-a\,d)^{2}\,g^{2}\,i\,(a+b\,x)} - \frac{2\,b\,B\,n\,(c+d\,x)\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{(b\,c-a\,d)^{2}\,g^{2}\,i\,(a+b\,x)} - $$

$$\frac{b\,(c+d\,x)\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{2}}{(b\,c-a\,d)^{2}\,g^{2}\,i\,(a+b\,x)} - \frac{d\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{3}}{3\,B\,(b\,c-a\,d)^{2}\,g^{2}\,i\,n}$$

Result (type 3, 793 leaves):

$$-\frac{B^2\,d\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^3}{3\,(b\,c-a\,d)^2\,g^2\,i}+\frac{2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\left(A+B\,n+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)}{(-b\,c+a\,d)\,g^2\,i\,(a+b\,x)}+$$

$$\left(\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\left(-a\,A\,B\,d\,n-b\,B^2\,c\,n^2-A\,b\,B\,d\,n\,x-b\,B^2\,d\,n^2\,x-a\,B^2\,d\,n\right.\right.$$

$$\left.\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-b\,B^2\,d\,n\,x\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\right)/$$

$$\left(\left(-b\,c+a\,d\right)^2\,g^2\,i\,(a+b\,x)\right)+\left(-A^2-2\,A\,B\,n-2\,B^2\,n^2-2\,A\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\right.$$

$$\left.2\,B^2\,n\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-B^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)/$$

$$\left(\left(b\,c-a\,d\right)\,g^2\,i\,(a+b\,x)\right)-\frac{1}{(b\,c-a\,d)^2\,g^2\,i}d\,\text{Log}\left[a+b\,x\right]$$

$$\left(A^2+2\,A\,B\,n+2\,B^2\,n^2+2\,A\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+\right.$$

$$\left.2\,B^2\,n\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+B^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)+$$

$$\frac{1}{(b\,c-a\,d)^2\,g^2\,i}d\left(A^2+2\,A\,B\,n+2\,B^2\,n^2+2\,A\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+2\,B^2\,n\right.$$

$$\left.\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+B^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)\text{Log}\left[c+d\,x\right]$$

Problem 192: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{\left(a\,g+b\,g\,x\right)^3\,\left(c\,i+d\,i\,x\right)}\,dx$$

Optimal (type 3, 369 leaves, 9 steps) :

$$\frac{4\,b\,B^2\,d\,n^2\,(c+d\,x)}{(b\,c-a\,d)^3\,g^3\,i\,(a+b\,x)}-\frac{b^2\,B^2\,n^2\,(c+d\,x)^2}{4\,(b\,c-a\,d)^3\,g^3\,i\,(a+b\,x)^2}+\frac{4\,b\,B\,d\,n\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^3\,g^3\,i\,(a+b\,x)}-$$

$$\frac{b^2\,B\,n\,(c+d\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)^3\,g^3\,i\,(a+b\,x)^2}+\frac{2\,b\,d\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^3\,g^3\,i\,(a+b\,x)}-$$

$$\frac{b^2\,(c+d\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^3\,g^3\,i\,(a+b\,x)^2}+\frac{d^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{3\,B\,(b\,c-a\,d)^3\,g^3\,i\,n}$$

Result (type 3, 975 leaves) :

$$\frac{1}{12\,(b\,c - a\,d)^3\,g^3\,i\,(a + b\,x)^2}\left(4\,B^2\,d^2\,n^2\,(a + b\,x)^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^3 + 6\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2\right.$$

$$\left(2\,a^2\,A\,d^2 - b^2\,B\,c^2\,n + 4\,a\,b\,B\,c\,d\,n + 4\,a\,A\,b\,d^2\,x + 2\,b^2\,B\,c\,d\,n\,x + 4\,a\,b\,B\,d^2\,n\,x + 2\,A\,b^2\,d^2\,x^2 + \right.$$

$$\left.3\,b^2\,B\,d^2\,n\,x^2 + 2\,B\,d^2\,(a + b\,x)^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] - 2\,B\,d^2\,n\,(a + b\,x)^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\right) -$$

$$6\,B\,(b\,c - a\,d)\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\,\Big(2\,A\,b\,c - 6\,a\,A\,d + b\,B\,c\,n - 7\,a\,B\,d\,n - 4\,A\,b\,d\,x - 6\,b\,B\,d\,n\,x + $$

$$2\,B\,(-3\,a\,d + b\,(c - 2\,d\,x))\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 2\,B\,n\,(-b\,c + 3\,a\,d + 2\,b\,d\,x)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big) -$$

$$3\,(b\,c - a\,d)^2\,\Big(2\,A^2 + 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(2\,A + B\,n)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] + $$

$$2\,B^2\,n^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\,\Big(2\,A + B\,n - 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\Big) + 6\,d\,(b\,c - a\,d)$$

$$(a + b\,x)\,\Big(2\,A^2 + 6\,A\,B\,n + 7\,B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(2\,A + 3\,B\,n)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] + $$

$$2\,B^2\,n^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\,\Big(2\,A + 3\,B\,n - 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\Big) + 6\,d^2\,(a + b\,x)^2$$

$$\text{Log}[a + b\,x]\,\Big(2\,A^2 + 6\,A\,B\,n + 7\,B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(2\,A + 3\,B\,n)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] + $$

$$2\,B^2\,n^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\,\Big(2\,A + 3\,B\,n - 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\Big) -$$

$$6\,d^2\,(a + b\,x)^2\,\Big(2\,A^2 + 6\,A\,B\,n + 7\,B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(2\,A + 3\,B\,n)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] + $$

$$\left.2\,B^2\,n^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\,\Big(2\,A + 3\,B\,n - 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\Big)\,\text{Log}[c + d\,x]\right)$$

Problem 193: Result more than twice size of optimal antiderivative.

$$\int \frac{\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\Big)^2}{(a\,g + b\,g\,x)^4\,(c\,i + d\,i\,x)}\,dx$$

Optimal (type 3, 543 leaves, 11 steps):

$$-\frac{6\,b\,B^2\,d^2\,n^2\,(c+d\,x)}{(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)}+\frac{3\,b^2\,B^2\,d\,n^2\,(c+d\,x)^2}{4\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^2}-$$

$$\frac{2\,b^3\,B^2\,n^2\,(c+d\,x)^3}{27\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^3}-\frac{6\,b\,B\,d^2\,n\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)}+$$

$$\frac{3\,b^2\,B\,d\,n\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^2}-\frac{2\,b^3\,B\,n\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^3}-$$

$$\frac{3\,b\,d^2\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)}+\frac{3\,b^2\,d\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^2}-$$

$$\frac{b^3\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^3}-\frac{d^3\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{3\,B\,(b\,c-a\,d)^4\,g^4\,i\,n}$$

Result (type 3, 1295 leaves) :

$$-\frac{1}{108\,(b\,c-a\,d)^4\,g^4\,i\,(a+b\,x)^3}$$

$$\left(36\,B^2\,d^3\,n^2\,(a+b\,x)^3\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^3+18\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^2\,\Big(6\,a^3\,A\,d^3+2\,b^3\,B\,c^3\,n-9\,a\,b^2\,B\,c^2\,d\,n+\right.$$

$$18\,a^2\,b\,B\,c\,d^2\,n+18\,a^2\,A\,b\,d^3\,x-3\,b^3\,B\,c^2\,d\,n\,x+18\,a\,b^2\,B\,c\,d^2\,n\,x+18\,a^2\,b\,B\,d^3\,n\,x+$$

$$18\,a\,A\,b^2\,d^3\,x^2+6\,b^3\,B\,c\,d^2\,n\,x^2+27\,a\,b^2\,B\,d^3\,n\,x^2+6\,A\,b^3\,d^3\,x^3+11\,b^3\,B\,d^3\,n\,x^3+$$

$$6\,B\,d^3\,(a+b\,x)^3\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]-6\,B\,d^3\,n\,(a+b\,x)^3\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)-3\,d\,(b\,c-a\,d)^2\,(a+b\,x)$$

$$\left(18\,A^2+30\,A\,B\,n+19\,B^2\,n^2+18\,B^2\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]^2-6\,B\,n\,(6\,A+5\,B\,n)\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]+\right.$$

$$18\,B^2\,n^2\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^2+6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(6\,A+5\,B\,n-6\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)\Big)+$$

$$6\,d^2\,(b\,c-a\,d)\,(a+b\,x)^2\,\left(18\,A^2+66\,A\,B\,n+85\,B^2\,n^2+18\,B^2\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]^2-\right.$$

$$6\,B\,n\,(6\,A+11\,B\,n)\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]+18\,B^2\,n^2\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^2+$$

$$6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(6\,A+11\,B\,n-6\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)\Big)+6\,d^3\,(a+b\,x)^3\,\text{Log}[a+b\,x]$$

$$\left(18\,A^2+66\,A\,B\,n+85\,B^2\,n^2+18\,B^2\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]^2-6\,B\,n\,(6\,A+11\,B\,n)\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]+\right.$$

$$18\,B^2\,n^2\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^2+6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(6\,A+11\,B\,n-6\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)\Big)+$$

$$4\,(b\,c-a\,d)^3\,\left(9\,A^2+6\,A\,B\,n+2\,B^2\,n^2+9\,B^2\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]^2-6\,B\,n\,(3\,A+B\,n)\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]+\right.$$

$$9\,B^2\,n^2\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^2+6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(3\,A+B\,n-3\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)\Big)+6\,B\,(b\,c-a\,d)\,n$$

$$\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\,\Big(3\,d\,(-b\,c+a\,d)\,(a+b\,x)\,\Big(6\,A+5\,B\,n+6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]-6\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)+$$

$$6\,d^2\,(a+b\,x)^2\,\Big(6\,A+11\,B\,n+6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]-6\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)+$$

$$4\,(b\,c-a\,d)^2\,\Big(3\,A+B\,n+3\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]-3\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)\Big)-6\,d^3\,(a+b\,x)^3$$

$$\left(18\,A^2+66\,A\,B\,n+85\,B^2\,n^2+18\,B^2\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]^2-6\,B\,n\,(6\,A+11\,B\,n)\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]+\right.$$

$$18\,B^2\,n^2\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]^2+6\,B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(6\,A+11\,B\,n-6\,B\,n\,\text{Log}\Big[\tfrac{a+b\,x}{c+d\,x}\Big]\Big)\Big)\,\text{Log}[c+d\,x]\right)$$

Problem 194: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\,g+b\,g\,x)^3\,\Big(A+B\,\text{Log}\Big[e\,\Big(\tfrac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{(c\,i+d\,i\,x)^2}\,\mathbb{d}x$$

Optimal (type 4, 770 leaves, 18 steps) :

$$\frac{2\,A\,B\,(b\,c-a\,d)^2\,g^3\,n\,(a+b\,x)}{d^3\,i^2\,(c+d\,x)} - \frac{2\,B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,(a+b\,x)}{d^3\,i^2\,(c+d\,x)} +$$

$$\frac{2\,B^2\,(b\,c-a\,d)^2\,g^3\,n\,(a+b\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^3\,i^2\,(c+d\,x)} - \frac{b\,B\,(b\,c-a\,d)\,g^3\,n\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{d^3\,i^2} -$$

$$\frac{3\,b\,(b\,c-a\,d)\,g^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^3\,i^2} - \frac{(b\,c-a\,d)^2\,g^3\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^3\,i^2\,(c+d\,x)} +$$

$$\frac{b^3\,g^3\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,d^4\,i^2} - \frac{6\,b\,B\,(b\,c-a\,d)^2\,g^3\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^4\,i^2} -$$

$$\frac{3\,b\,(b\,c-a\,d)^2\,g^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^4\,i^2} + \frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,\text{Log}\left[c+d\,x\right]}{d^4\,i^2} +$$

$$\frac{b\,B\,(b\,c-a\,d)^2\,g^3\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{d^4\,i^2} -$$

$$\frac{6\,b\,B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i^2} -$$

$$\frac{6\,b\,B\,(b\,c-a\,d)^2\,g^3\,n\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i^2} -$$

$$\frac{b\,B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{d^4\,i^2} + \frac{6\,b\,B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^4\,i^2}$$

Result (type 4, 5396 leaves) :

$$\frac{a^3\,B^2\,g^3\,n^2\,(a+b\,x)\,\left(2-2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\right)}{(b\,c-a\,d)\,i^2\,(c+d\,x)} -$$

$$\frac{b^2\,(2\,b\,c-3\,a\,d)\,g^3\,x\,\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{d^3\,i^2} +$$

$$\frac{b^3\,g^3\,x^2\,\left(A+B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{2\,d^2\,i^2} +$$

$$\frac{1}{d^4\,i^2\,(c+d\,x)}\left(A^2\,b^3\,c^3\,g^3 - 3\,a\,A^2\,b^2\,c^2\,d\,g^3 + 3\,a^2\,A^2\,b\,c\,d^2\,g^3 - a^3\,A^2\,d^3\,g^3 + 2\,A\,b^3\,B\,c^3\,g^3\right.$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - 6\,a\,A\,b^2\,B\,c^2\,d\,g^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +$$

$$6\,a^2\,A\,b\,B\,c\,d^2\,g^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - 2\,a^3\,A\,B\,d^3\,g^3$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + b^3\,B^2\,c^3\,g^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 -$$

$$3\,a\,b^2\,B^2\,c^2\,d\,g^3\,\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 + 3\,a^2\,b\,B^2\,c\,d^2\,g^3$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 - a^3\,B^2\,d^3\,g^3\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right) +$$

$$\frac{1}{d^4\,i^2}3\,b\,(b\,c - a\,d)^2\,g^3\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2\text{Log}[c+d\,x] +$$

$$\frac{1}{i^2}2\,a^3\,B\,g^3\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{c}{d}+x\right)\left(\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{(c+d\,x)^2\,\text{Log}\left[\frac{c}{d}+x\right]} + \frac{\frac{d\left(\frac{a}{b}+x\right)\text{Log}\left[\frac{a}{b}+x\right]}{\left(-c+\frac{a\,d}{b}\right)^2\left(1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right)} + \frac{\text{Log}\left[1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right]}{-c+\frac{a\,d}{b}}}{d} - \right.$$

$$\left. \frac{-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]}{d\,(c+d\,x)}\right) +$$

$$\frac{1}{i^2}2\,b^3\,B\,g^3\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{2\,c\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{d^3} + \frac{2\,c\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3} - \frac{3\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^4} - \right.$$

$$\frac{c^3\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^4\,(c+d\,x)} + \frac{-\frac{1}{2}b\left(-\frac{a\,x}{b^2}+\frac{x^2}{2\,b}+\frac{a^2\,\text{Log}[a+b\,x]}{b^3}\right)+\frac{1}{2}x^2\,\text{Log}\left[\frac{a+b\,x}{b}\right]}{d^2} -$$

$$\frac{c^3\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^3} - \frac{-\frac{1}{2}d\left(-\frac{c\,x}{d^2}+\frac{x^2}{2\,d}+\frac{c^2\,\text{Log}[c+d\,x]}{d^3}\right)+\frac{1}{2}x^2\,\text{Log}\left[\frac{c+d\,x}{d}\right]}{d^2} +$$

$$\frac{1}{2\,d^4}\left(-4\,c\,d\,x+d^2\,x^2+\frac{2\,c^3}{c+d\,x}+6\,c^2\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\right.$$

$$\left.\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right) + \frac{3\,c^2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^4}\right) +$$

$$\frac{1}{i^2}6\,a\,b^2\,B\,g^3\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{d^2} - \frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2} + \frac{c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3} + \right.$$

$$\frac{c^2\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)} + \frac{c^2\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)} - \frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^2} + \frac{1}{d^3}$$

$$\left(d\,x - \frac{c^2}{c+d\,x} - 2\,c\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right) - $$

$$\left. \frac{2\,c\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^3} \right) + $$

$$\frac{1}{i^2}6\,a^2\,b\,B\,g^3\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{\text{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^2} - \frac{c\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2\,(c+d\,x)} - \frac{c\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)} - \frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d} + \frac{1}{d^2} \right.$$

$$\left(\frac{c}{c+d\,x} + \text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right) + $$

$$\left. \frac{\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^2} \right) + $$

$$\frac{1}{i^2}b^3\,B^2\,g^3\,n^2\left(-\frac{2\,c\,(a+b\,x)\left(2 - 2\,\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b\,d^3} + \frac{1}{4\,b^2\,d^2} \right.$$

$$(a+b\,x)\left(-7\,a + b\,x + (6\,a - 2\,b\,x)\,\text{Log}\left[\frac{a}{b}+x\right] - 2\,(a-b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2\right) + \frac{c^2\,\text{Log}\left[\frac{c}{d}+x\right]^3}{d^4} - $$

$$\frac{2\,c\,(c+d\,x)\left(2 - 2\,\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^4} + \frac{c^3\left(2 + 2\,\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^4\,(c+d\,x)} + $$

$$\frac{1}{4\,d^4}(c+d\,x)\left(-7\,c + d\,x + (6\,c - 2\,d\,x)\,\text{Log}\left[\frac{c}{d}+x\right] - 2\,(c-d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2\right) + $$

$$\frac{1}{2\,d^4}\left(-4\,c\,d\,x + d^2\,x^2 + \frac{2\,c^3}{c+d\,x} + 6\,c^2\,\text{Log}[c+d\,x]\right)$$

$$\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 - \left(c^3\left(-d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2 + \right.\right.$$

$$2 b (c + d x) \log\left[\frac{a}{b} + x\right] \log\left[\frac{b (c + d x)}{b c - a d}\right] + 2 b (c + d x) \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right)\right) \bigg/$$

$$\left(d^4 (-b c + a d) (c + d x)\right) + 2 \left(-\log\left[\frac{a}{b} + x\right] + \log\left[\frac{c}{d} + x\right] + \log\left[\frac{a}{c + d x} + \frac{b x}{c + d x}\right]\right)$$

$$\left(-\frac{2 c \left(\frac{a}{b} + x\right) \left(-1 + \log\left[\frac{a}{b} + x\right]\right)}{d^3} + \frac{2 c \left(\frac{c}{d} + x\right) \left(-1 + \log\left[\frac{c}{d} + x\right]\right)}{d^3} - \frac{3 c^2 \log\left[\frac{c}{d} + x\right]^2}{2 d^4} -\right.$$

$$\frac{c^3 \left(1 + \log\left[\frac{c}{d} + x\right]\right)}{d^4 (c + d x)} + \frac{-\frac{1}{2} b \left(-\frac{a x}{b^2} + \frac{x^2}{2 b} + \frac{a^2 \log[a + b x]}{b^3}\right) + \frac{1}{2} x^2 \log\left[\frac{a + b x}{b}\right]}{d^2} -$$

$$\frac{c^3 \left(-\frac{\log\left[\frac{a}{b} + x\right]}{d (c + d x)} - \frac{b \log[a + b x]}{d (-b c + a d)} + \frac{b \log[c + d x]}{d (-b c + a d)}\right)}{d^3} - \frac{-\frac{1}{2} d \left(-\frac{c x}{d^2} + \frac{x^2}{2 d} + \frac{c^2 \log[c + d x]}{d^3}\right) + \frac{1}{2} x^2 \log\left[\frac{c + d x}{d}\right]}{d^2} +$$

$$\left.\frac{3 c^2 \left(\log\left[\frac{a}{b} + x\right] \log\left[\frac{b (c + d x)}{b c - a d}\right] + \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right)}{d^4}\right) + \frac{1}{d^4}$$

$$3 c^2 \left(\log\left[\frac{a}{b} + x\right]^2 \log\left[\frac{b (c + d x)}{b c - a d}\right] + 2 \log\left[\frac{a}{b} + x\right] \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] -\right.$$

$$\left. 2 \text{PolyLog}\left[3, \frac{d (a + b x)}{-b c + a d}\right]\right) - 2 \left(-\frac{1}{b d^4}\right.$$

$$2 c \left(a d + 2 b d x - b d x \log\left[\frac{c}{d} + x\right] - b c \log[c + d x] + \log\left[\frac{a}{b} + x\right] \left(-d (a + b x) + d (a + b x)\right.\right.$$

$$\left.\left. \log\left[\frac{c}{d} + x\right] + (b c - a d) \log\left[\frac{b (c + d x)}{b c - a d}\right]\right) + (b c - a d) \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right) +$$

$$\frac{1}{4 b^2 d^4} \left(-2 a b c d - 3 b^2 c d x - 3 a b d^2 x + b^2 d^2 x^2 + 2 a b d^2 x \log\left[\frac{c}{d} + x\right] -\right.$$

$$b^2 d^2 x^2 \log\left[\frac{c}{d} + x\right] + a^2 d^2 \log[a + b x] + b^2 c^2 \log[c + d x] + 2 a b c d \log[c + d x] +$$

$$\log\left[\frac{a}{b} + x\right] \left(b d (2 a c + b x (2 c - d x)) - 2 d^2 (a^2 - b^2 x^2) \log\left[\frac{c}{d} + x\right] + (-2 b^2 c^2 + 2 a^2 d^2)\right.$$

$$\left.\left. \log\left[\frac{b (c + d x)}{b c - a d}\right]\right) + (-2 b^2 c^2 + 2 a^2 d^2) \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right) -$$

$$\left(c^3 \left(2 (b c - a d) \log\left[\frac{a}{b} + x\right] \left(1 + \log\left[\frac{c}{d} + x\right]\right) + b (c + d x) \left(\log\left[\frac{c}{d} + x\right]^2 -\right.\right.\right.$$

$$2 \log[a + b x] - 2 \log\left[\frac{c}{d} + x\right] \log\left[\frac{d (a + b x)}{-b c + a d}\right] + 2 \log[c + d x]\right) -$$

$$\left.\left. 2 b (c + d x) \text{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right]\right)\right) \bigg/ \left(2 d^4 (-b c + a d) (c + d x)\right) +$$

$$\frac{1}{2\,d^4}3\,c^2\left(\text{Log}\left[\frac{c}{d}+x\right]^2\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,\text{Log}\left[\frac{c}{d}+x\right]\right.$$

$$\left.\left.\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$\frac{1}{i^2}\,3\,a\,b^2\,B^2\,g^3\,n^2\left(\frac{(a+b\,x)\,\left(2-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b\,d^2}-\frac{2\,c\,\text{Log}\left[\frac{c}{d}+x\right]^3}{3\,d^3}+\right.$$

$$\frac{(c+d\,x)\,\left(2-2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^3}-\frac{c^2\,\left(2+2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^3\,(c+d\,x)}+\frac{1}{d^3}$$

$$\left(d\,x-\frac{c^2}{c+d\,x}-2\,c\,\text{Log}\left[c+d\,x\right]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2+$$

$$\left(c^2\left(-d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+2\,b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\right.\right.$$

$$\left.\left.2\,b\,(c+d\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\bigg/$$

$$\left(d^3\,(-b\,c+a\,d)\,(c+d\,x)\right)+2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\,\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{d^2}-\frac{\left(\frac{c}{d}+x\right)\,\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2}+\frac{c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3}+\right.$$

$$\frac{c^2\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)}+\frac{c^2\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\text{Log}\,[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\text{Log}\,[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^2}-$$

$$\left.\frac{2\,c\,\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^3}-\frac{1}{d^3}\right)$$

$$2\,c\left(\text{Log}\left[\frac{a}{b}+x\right]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-\right.$$

$$\left.2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\left(\frac{1}{b\,d^3}\left(a\,d+2\,b\,d\,x-b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right]-b\,c\,\text{Log}\,[c+d\,x]+\right.\right.$$

$$\left.\text{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+b\,x)+d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right]+(b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+\right.$$

$$\left.\left.(b\,c-a\,d)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)+\left(c^2\left(2\,(b\,c-a\,d)\,\text{Log}\left[\frac{a}{b}+x\right]\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)+\right.$$

$$b\,(c+d\,x)\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]^2-2\,\mathrm{Log}[a+b\,x]-2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$\left.2\,\mathrm{Log}[c+d\,x]\right)-2\,b\,(c+d\,x)\,\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Bigg)\Bigg/$$

$$\left(2\,d^3\,(-b\,c+a\,d)\,(c+d\,x)\right)-\frac{1}{d^3}c\,\left(\mathrm{Log}\left[\frac{c}{d}+x\right]^2\left(\mathrm{Log}\left[\frac{a}{b}+x\right]-\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-\right.$$

$$\left.2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,\mathrm{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

$$\frac{1}{i^2}\,3\,a^2\,b\,B^2\,g^3\,n^2\,\left(\frac{\mathrm{Log}\left[\frac{c}{d}+x\right]^3}{3\,d^2}+\frac{c\,\left(2+2\,\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^2\,(c+d\,x)}+\frac{1}{d^2}\right.$$

$$\left(\frac{c}{c+d\,x}+\mathrm{Log}[c+d\,x]\right)\left(-\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2-$$

$$\left(c\,\left(-d\,(a+b\,x)\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2+2\,b\,(c+d\,x)\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\right.\right.$$

$$\left.\left.2\,b\,(c+d\,x)\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Bigg/\left(d^2\,(-b\,c+a\,d)\,(c+d\,x)\right)+$$

$$2\,\left(-\mathrm{Log}\left[\frac{a}{b}+x\right]+\mathrm{Log}\left[\frac{c}{d}+x\right]+\mathrm{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)\left(-\frac{\mathrm{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^2}-\frac{c\,\left(1+\mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{d^2\,(c+d\,x)}-\right.$$

$$\frac{c\,\left(-\frac{\mathrm{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\mathrm{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\mathrm{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d}+\frac{\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^2}\right)+$$

$$\frac{1}{d^2}\left(\mathrm{Log}\left[\frac{a}{b}+x\right]^2\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-\right.$$

$$2\,\mathrm{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,\left(-\left(\left(c\,\left(2\,(b\,c-a\,d)\,\mathrm{Log}\left[\frac{a}{b}+x\right]\,\left(1+\mathrm{Log}\left[\frac{c}{d}+x\right]\right)+b\,(c+d\,x)\right.\right.\right.$$

$$\left(\mathrm{Log}\left[\frac{c}{d}+x\right]^2-2\,\mathrm{Log}[a+b\,x]-2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\mathrm{Log}[c+d\,x]\right)-2$$

$$\left.b\,(c+d\,x)\,\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Bigg/\left(2\,d^2\,(-b\,c+a\,d)\,(c+d\,x)\right)\right)+\frac{1}{2\,d^2}$$

$$\left(\mathrm{Log}\left[\frac{c}{d}+x\right]^2\left(\mathrm{Log}\left[\frac{a}{b}+x\right]-\mathrm{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\,\mathrm{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\right.$$

$$2\,\text{PolyLog}\Big[3,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)\Big)\Big)$$

Problem 195: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g+b\,g\,x)^2\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{(c\,i+d\,i\,x)^2}\,\mathbb{d}x$$

Optimal (type 4, 500 leaves, 12 steps):

$$-\frac{2\,A\,B\,(b\,c-a\,d)\,g^2\,n\,(a+b\,x)}{d^2\,i^2\,(c+d\,x)}+\frac{2\,B^2\,(b\,c-a\,d)\,g^2\,n^2\,(a+b\,x)}{d^2\,i^2\,(c+d\,x)}-$$

$$\frac{2\,B^2\,(b\,c-a\,d)\,g^2\,n\,(a+b\,x)\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]}{d^2\,i^2\,(c+d\,x)}+\frac{b\,g^2\,(a+b\,x)\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{d^2\,i^2}+$$

$$\frac{(b\,c-a\,d)\,g^2\,(a+b\,x)\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{d^2\,i^2\,(c+d\,x)}+$$

$$\frac{2\,b\,B\,(b\,c-a\,d)\,g^2\,n\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)\,\text{Log}\Big[\frac{b\,c-a\,d}{b\,(c+d\,x)}\Big]}{d^3\,i^2}+$$

$$\frac{2\,b\,(b\,c-a\,d)\,g^2\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2\,\text{Log}\Big[\frac{b\,c-a\,d}{b\,(c+d\,x)}\Big]}{d^3\,i^2}+\frac{2\,b\,B^2\,(b\,c-a\,d)\,g^2\,n^2\,\text{PolyLog}\Big[2,\ \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^3\,i^2}+$$

$$\frac{4\,b\,B\,(b\,c-a\,d)\,g^2\,n\,\Big(A+B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)\,\text{PolyLog}\Big[2,\ \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^3\,i^2}-$$

$$\frac{4\,b\,B^2\,(b\,c-a\,d)\,g^2\,n^2\,\text{PolyLog}\Big[3,\ \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\Big]}{d^3\,i^2}$$

Result (type 4, 3186 leaves):

$$\frac{a^2\,B^2\,g^2\,n^2\,(a+b\,x)\,\Big(2-2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]+\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2\Big)}{(b\,c-a\,d)\,i^2\,(c+d\,x)}+$$

$$\frac{b^2\,g^2\,x\,\Big(A+B\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]-n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\Big)^2}{d^2\,i^2}+\frac{1}{d^3\,i^2\,(c+d\,x)}$$

$$\Big(-A^2\,b^2\,c^2\,g^2+2\,a\,A^2\,b\,c\,d\,g^2-a^2\,A^2\,d^2\,g^2-2\,A\,b^2\,B\,c^2\,g^2\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]-n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)+$$

$$4\,a\,A\,b\,B\,c\,d\,g^2\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]-n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)-2\,a^2\,A\,B\,d^2\,g^2$$

$$\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]-n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)-b^2\,B^2\,c^2\,g^2\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]-n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)^2+2\,a\,b\,B^2$$

$$c\, d\, g^2 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 - a^2\, B^2\, d^2\, g^2 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 \right) -$$

$$\frac{2\,b\,(b\,c-a\,d)\,g^2 \left(A+B\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2 \text{Log}[c+d\,x]}{d^3\,i^2} + \frac{1}{i^2}$$

$$2\,a^2\,B\,g^2\,n \left(A+B\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{c}{d}+x\right)\left(\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{(c+d\,x)^2\,\text{Log}\left[\frac{c}{d}+x\right]} + \frac{\frac{d\left(\frac{a}{b}+x\right)\text{Log}\left[\frac{a}{b}+x\right]}{\left(-c+\frac{a\,d}{b}\right)^2\left(1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right)} + \frac{\text{Log}\left[1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right]}{-c+\frac{a\,d}{b}}}{d} -\right.$$

$$\left. \frac{-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]}{d\,(c+d\,x)} \right) +$$

$$\frac{1}{i^2}2\,b^2\,B\,g^2\,n\left(A+B\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)}{d^2} - \frac{\left(\frac{c}{d}+x\right)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2} + \frac{c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3} + \right.$$

$$\frac{c^2\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)} + \frac{c^2\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)} - \frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^2} + \frac{1}{d^3}$$

$$\left(d\,x - \frac{c^2}{c+d\,x} - 2\,c\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right) -$$

$$\left. \frac{2\,c\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^3} \right) +$$

$$\frac{1}{i^2}4\,a\,b\,B\,g^2\,n\left(A+B\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{\text{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^2} - \frac{c\,\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2\,(c+d\,x)} - \frac{c\,\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)} - \frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d} + \frac{1}{d^2}\right.$$

$$\left(\frac{c}{c+d\,x} + \text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right) +$$

$$\left.\frac{\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^2}\right) +$$

$$\frac{1}{i^2}\,b^2\,B^2\,g^2\,n^2\,\left(\frac{(a+b\,x)\,\left(2 - 2\,\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{a}{b}+x\right]^2\right)}{b\,d^2} - \frac{2\,c\,\text{Log}\left[\frac{c}{d}+x\right]^3}{3\,d^3} + \right.$$

$$\frac{(c+d\,x)\,\left(2 - 2\,\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^3} - \frac{c^2\,\left(2 + 2\,\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^3\,(c+d\,x)} + \frac{1}{d^3}$$

$$\left(d\,x - \frac{c^2}{c+d\,x} - 2\,c\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 +$$

$$\left(c^2\,\left(-d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 2\,b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 2\,b\,(c+d\,x)\right.\right.$$

$$\left.\left.\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) \Big/ \left(d^3\,(-b\,c+a\,d)\,(c+d\,x)\right) + 2\,\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \right.$$

$$\left.\text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)\left(\frac{\left(\frac{a}{b}+x\right)\,\left(-1 + \text{Log}\left[\frac{a}{b}+x\right]\right)}{d^2} - \frac{\left(\frac{c}{d}+x\right)\,\left(-1 + \text{Log}\left[\frac{c}{d}+x\right]\right)}{d^2} + \right.$$

$$\frac{c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3} + \frac{c^2\,\left(1 + \text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)} + \frac{c^2\,\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)} - \frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^2} - $$

$$\left.\frac{2\,c\,\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^3}\right) - \frac{1}{d^3}$$

$$2\,c\,\left(\text{Log}\left[\frac{a}{b}+x\right]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - \right.$$

$$\left.2\,\text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) - 2\,\left(\frac{1}{b\,d^3}\left(a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right] - b\,c\,\text{Log}[c+d\,x] + \right.\right.$$

$$\left.\left.\text{Log}\left[\frac{a}{b}+x\right]\,\left(-d\,(a+b\,x) + d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right] + (b\,c-a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right) + \right.$$

$$(b\,c - a\,d)\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big] + \Big(c^2\,\Big(2\,(b\,c - a\,d)\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\Big(1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big)+$$

$$b\,(c+d\,x)\,\Big(\text{Log}\Big[\frac{c}{d}+x\Big]^2 - 2\,\text{Log}[a+b\,x] - 2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+$$

$$2\,\text{Log}[c+d\,x]\Big) - 2\,b\,(c+d\,x)\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big]\Big)\Big)\Big/$$

$$\Big(2\,d^3\,(-b\,c+a\,d)\,(c+d\,x)\Big) - \frac{1}{d^3}c\,\Big(\text{Log}\Big[\frac{c}{d}+x\Big]^2\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]-\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)-$$

$$2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big] + 2\,\text{PolyLog}\Big[3,\,\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big]\Big)\Big) +$$

$$\frac{1}{i^2}\,2\,a\,b\,B^2\,g^2\,n^2\,\left(\frac{\text{Log}\Big[\frac{c}{d}+x\Big]^3}{3\,d^2} + \frac{c\,\Big(2+2\,\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]^2\Big)}{d^2\,(c+d\,x)} + \frac{1}{d^2}\right.$$

$$\Big(\frac{c}{c+d\,x}+\text{Log}[c+d\,x]\Big)\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\Big]\Big)^2-$$

$$\Big(c\,\Big(-d\,(a+b\,x)\,\text{Log}\Big[\frac{a}{b}+x\Big]^2 + 2\,b\,(c+d\,x)\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big]+$$

$$2\,b\,(c+d\,x)\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big)\Big)\Big/\Big(d^2\,(-b\,c+a\,d)\,(c+d\,x)\Big)+$$

$$2\,\Big(-\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[\frac{c}{d}+x\Big]+\text{Log}\Big[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\Big]\Big)\,\left(-\frac{\text{Log}\Big[\frac{c}{d}+x\Big]^2}{2\,d^2} - \frac{c\,\Big(1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big)}{d^2\,(c+d\,x)} - \right.$$

$$\frac{c\,\Big(-\frac{\text{Log}\Big[\frac{a}{b}+x\Big]}{d\,(c+d\,x)} - \frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\Big)}{d} + \frac{\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big] + \text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]}{d^2}\Big) +$$

$$\frac{1}{d^2}\,\Big(\text{Log}\Big[\frac{a}{b}+x\Big]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big] + 2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{PolyLog}\Big[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-$$

$$2\,\text{PolyLog}\Big[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\Big) - 2\,\Big(-\Big(\Big(c\,\Big(2\,(b\,c - a\,d)\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\Big(1+\text{Log}\Big[\frac{c}{d}+x\Big]\Big)+b\,(c+d\,x)$$

$$\Big(\text{Log}\Big[\frac{c}{d}+x\Big]^2 - 2\,\text{Log}[a+b\,x] - 2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + 2\,\text{Log}[c+d\,x]\Big) - 2$$

$$b\,(c+d\,x)\,\text{PolyLog}\Big[2,\,\frac{b\,(c+d\,x)}{b\,c - a\,d}\Big]\Big)\Big)\Big/\Big(2\,d^2\,(-b\,c+a\,d)\,(c+d\,x)\Big)\Big) + \frac{1}{2\,d^2}$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^2\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{d\ (a+b\ x)}{-b\ c+a\ d}\right]\right)-2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2,\frac{b\ (c+d\ x)}{b\ c-a\ d}\right]+\right.$$

$$\left.2\,\text{PolyLog}\left[3,\frac{b\ (c+d\ x)}{b\ c-a\ d}\right]\right)\Bigg)$$

Problem 196: Result more than twice size of optimal antiderivative.

$$\int\frac{(a\ g+b\ g\ x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\ x}{c+d\ x}\right)^n\right]\right)^2}{(c\ i+d\ i\ x)^2}\,dx$$

Optimal (type 4, 282 leaves, 9 steps):

$$\frac{2\,A\,B\,g\,n\,(a+b\,x)}{d\,i^2\,(c+d\,x)}-\frac{2\,B^2\,g\,n^2\,(a+b\,x)}{d\,i^2\,(c+d\,x)}+\frac{2\,B^2\,g\,n\,(a+b\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d\,i^2\,(c+d\,x)}-$$

$$\frac{g\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d\,i^2\,(c+d\,x)}-\frac{b\,g\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^2\,i^2}-$$

$$\frac{2\,b\,B\,g\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^2\,i^2}+\frac{2\,b\,B^2\,g\,n^2\,\text{PolyLog}\left[3,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^2\,i^2}$$

Result (type 4, 1305 leaves):

$$\frac{1}{i^2}\,g\left(\frac{(b\,c-a\,d)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2}{d^2\,(c+d\,x)}+\right.$$

$$\frac{a\,B^2\,n^2\,(a+b\,x)\left(2-2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\right)}{(b\,c-a\,d)\,(c+d\,x)}+$$

$$\frac{b\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\text{Log}[c+d\,x]}{d^2}+$$

$$\left(2\,a\,B\,n\left(-A-B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\left(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]+\right.\right.$$

$$\left.\left.(-b\,c+a\,d)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-b\,c\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-b\,d\,x\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\Bigg/$$

$$(d\,(-b\,c+a\,d)\,(c+d\,x))+\frac{1}{d^2}b\,B\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left(-\text{Log}\left[\frac{c}{d}+x\right]^2+2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+\right.$$

$$2\left(-\frac{c}{c+d\,x}+\frac{b\,c\,\text{Log}[a+b\,x]}{-b\,c+a\,d}+\frac{b\,c\,\text{Log}[c+d\,x]}{b\,c-a\,d}-\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+\right.$$

$$\operatorname{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\left(\frac{c}{c+d\,x}+\operatorname{Log}[c+d\,x]\right)+\operatorname{Log}\left[\frac{a}{b}+x\right]\operatorname{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$2\operatorname{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+\frac{1}{3\,d^2\,(b\,c-a\,d)\,(c+d\,x)}$$

$$b\,B^2\,n^2\left((b\,c-a\,d)\,(c+d\,x)\operatorname{Log}\left[\frac{c}{d}+x\right]^3+3\,c\,(b\,c-a\,d)\left(2+2\operatorname{Log}\left[\frac{c}{d}+x\right]+\operatorname{Log}\left[\frac{c}{d}+x\right]^2\right)+$$

$$3\,(b\,c-a\,d)\left(-\operatorname{Log}\left[\frac{a}{b}+x\right]+\operatorname{Log}\left[\frac{c}{d}+x\right]+\operatorname{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\left(c+(c+d\,x)\operatorname{Log}[c+d\,x]\right)+$$

$$3\,c\operatorname{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+b\,x)\operatorname{Log}\left[\frac{a}{b}+x\right]+2\,b\,(c+d\,x)\operatorname{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$6\,b\,c\,(c+d\,x)\operatorname{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+3\left(\operatorname{Log}\left[\frac{a}{b}+x\right]-\operatorname{Log}\left[\frac{c}{d}+x\right]-\operatorname{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$

$$\left((b\,c-a\,d)\,(c+d\,x)\operatorname{Log}\left[\frac{c}{d}+x\right]^2+2\,c\,(b\,c-a\,d)\left(1+\operatorname{Log}\left[\frac{c}{d}+x\right]\right)+\right.$$

$$2\,c\left((-b\,c+a\,d)\operatorname{Log}\left[\frac{a}{b}+x\right]+b\,(c+d\,x)\left(\operatorname{Log}[a+b\,x]-\operatorname{Log}[c+d\,x]\right)\right)-2\,(b\,c-a\,d)$$

$$(c+d\,x)\left(\operatorname{Log}\left[\frac{a}{b}+x\right]\operatorname{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\operatorname{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)+3\,(b\,c-a\,d)$$

$$(c+d\,x)\left(\operatorname{Log}\left[\frac{a}{b}+x\right]^2\operatorname{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\operatorname{Log}\left[\frac{a}{b}+x\right]\operatorname{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-\right.$$

$$2\operatorname{PolyLog}\left[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-3\left(c\left(2\,(b\,c-a\,d)\operatorname{Log}\left[\frac{a}{b}+x\right]\left(1+\operatorname{Log}\left[\frac{c}{d}+x\right]\right)+\right.\right.$$

$$b\,(c+d\,x)\left(\operatorname{Log}\left[\frac{c}{d}+x\right]^2-2\operatorname{Log}[a+b\,x]-2\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\right.$$

$$\left.\left.2\operatorname{Log}[c+d\,x]\right)-2\,b\,(c+d\,x)\operatorname{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+$$

$$(b\,c-a\,d)\,(c+d\,x)\left(\operatorname{Log}\left[\frac{c}{d}+x\right]^2\left(\operatorname{Log}\left[\frac{a}{b}+x\right]-\operatorname{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-\right.$$

$$\left.\left.\left.\left.2\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\operatorname{PolyLog}\left[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)\right)$$

Problem 197: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\operatorname{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 3, 163 leaves, 4 steps):

$$-\frac{2\,A\,B\,n\,(a+b\,x)}{(b\,c-a\,d)\,i^2\,(c+d\,x)}+\frac{2\,B^2\,n^2\,(a+b\,x)}{(b\,c-a\,d)\,i^2\,(c+d\,x)}-$$

$$\frac{2\,B^2\,n\,(a+b\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c-a\,d)\,i^2\,(c+d\,x)}+\frac{(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)\,i^2\,(c+d\,x)}$$

Result (type 3, 391 leaves) :

$$\frac{1}{d\,(-b\,c+a\,d)\,i^2\,(c+d\,x)}$$

$$\left(A^2\,b\,c-a\,A^2\,d-2\,A\,b\,B\,c\,n+2\,a\,A\,B\,d\,n+2\,b\,B^2\,c\,n^2-2\,a\,B^2\,d\,n^2+B^2\,(b\,c-a\,d)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-\right.$$

$$b\,B^2\,c\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2-b\,B^2\,d\,n^2\,x\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+2\,b\,B\,n\,(c+d\,x)\,\text{Log}[a+b\,x]$$

$$\left(-A+B\,n-B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+2\,A\,b\,B\,c\,n\,\text{Log}[c+d\,x]-$$

$$2\,b\,B^2\,c\,n^2\,\text{Log}[c+d\,x]+2\,A\,b\,B\,d\,n\,x\,\text{Log}[c+d\,x]-2\,b\,B^2\,d\,n^2\,x\,\text{Log}[c+d\,x]-$$

$$2\,b\,B^2\,c\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\,\text{Log}[c+d\,x]-2\,b\,B^2\,d\,n^2\,x\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\,\text{Log}[c+d\,x]+$$

$$\left.2\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left((b\,c-a\,d)\,(A-B\,n)+b\,B\,n\,(c+d\,x)\,\text{Log}[c+d\,x]\right)\right)$$

Problem 198: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)\,(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 3, 231 leaves, 7 steps) :

$$\frac{2\,A\,B\,d\,n\,(a+b\,x)}{(b\,c-a\,d)^2\,g\,i^2\,(c+d\,x)}-\frac{2\,B^2\,d\,n^2\,(a+b\,x)}{(b\,c-a\,d)^2\,g\,i^2\,(c+d\,x)}+\frac{2\,B^2\,d\,n\,(a+b\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c-a\,d)^2\,g\,i^2\,(c+d\,x)}-$$

$$\frac{d\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^2\,g\,i^2\,(c+d\,x)}+\frac{b\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{3\,B\,(b\,c-a\,d)^2\,g\,i^2\,n}$$

Result (type 3, 789 leaves) :

$$\frac{b\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^3}{3\,(b\,c-a\,d)^2\,g\,i^2} - \frac{2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\left(-A+B\,n-B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)}{(b\,c-a\,d)\,g\,i^2\,(c+d\,x)} +$$

$$\left(\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\left(A\,b\,B\,c\,n - a\,B^2\,d\,n^2 + A\,b\,B\,d\,n\,x - b\,B^2\,d\,n^2\,x + b\,B^2\,c\,n\right.\right.$$

$$\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + b\,B^2\,d\,n\,x\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\Bigg/$$

$$\left((b\,c-a\,d)^2\,g\,i^2\,(c+d\,x)\right) + \left(A^2 - 2\,A\,B\,n + 2\,B^2\,n^2 + 2\,A\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - \right.$$

$$\left.2\,B^2\,n\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + B^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)\Bigg/$$

$$\left((b\,c-a\,d)\,g\,i^2\,(c+d\,x)\right) + \frac{1}{(b\,c-a\,d)^2\,g\,i^2}b\,\text{Log}\left[a+b\,x\right]$$

$$\left(A^2 - 2\,A\,B\,n + 2\,B^2\,n^2 + 2\,A\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - \right.$$

$$\left.2\,B^2\,n\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + B^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right) -$$

$$\frac{1}{(b\,c-a\,d)^2\,g\,i^2}b\left(A^2 - 2\,A\,B\,n + 2\,B^2\,n^2 + 2\,A\,B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - 2\,B^2\,n\right.$$

$$\left.\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + B^2\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right)\text{Log}\left[c+d\,x\right]$$

Problem 199: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^2\,(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 3, 392 leaves, 10 steps):

$$-\frac{2\,A\,B\,d^2\,n\,(a+b\,x)}{(b\,c-a\,d)^3\,g^2\,i^2\,(c+d\,x)} + \frac{2\,B^2\,d^2\,n^2\,(a+b\,x)}{(b\,c-a\,d)^3\,g^2\,i^2\,(c+d\,x)} -$$

$$\frac{2\,b^2\,B^2\,n^2\,(c+d\,x)}{(b\,c-a\,d)^3\,g^2\,i^2\,(a+b\,x)} - \frac{2\,B^2\,d^2\,n\,(a+b\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c-a\,d)^3\,g^2\,i^2\,(c+d\,x)} -$$

$$\frac{2\,b^2\,B\,n\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^3\,g^2\,i^2\,(a+b\,x)} + \frac{d^2\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^3\,g^2\,i^2\,(c+d\,x)} -$$

$$\frac{b^2\,(c+d\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^3\,g^2\,i^2\,(a+b\,x)} - \frac{2\,b\,d\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{3\,B\,(b\,c-a\,d)^3\,g^2\,i^2\,n}$$

Result (type 3, 870 leaves):

$$-\frac{1}{3\,(b\,c-a\,d)^3\,g^2\,i^2\,(a+b\,x)\,(c+d\,x)}$$

$$\left(2\,b\,B^2\,d\,n^2\,(a+b\,x)\,(c+d\,x)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^3 + 3\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2\,\Big(2\,a\,A\,b\,c\,d + b^2\,B\,c^2\,n -\right.$$

$$a^2\,B\,d^2\,n + 2\,A\,b^2\,c\,d\,x + 2\,a\,A\,b\,d^2\,x + 2\,b^2\,B\,c\,d\,n\,x - 2\,a\,b\,B\,d^2\,n\,x + 2\,A\,b^2\,d^2\,x^2 +$$

$$2\,b\,B\,d\,(a+b\,x)\,(c+d\,x)\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 2\,b\,B\,d\,n\,(a+b\,x)\,(c+d\,x)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) +$$

$$6\,B\,(b\,c-a\,d)\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\Big(A\,b\,c + a\,A\,d + b\,B\,c\,n - a\,B\,d\,n + 2\,A\,b\,d\,x +$$

$$B\,(a\,d + b\,(c+2\,d\,x))\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - B\,n\,(b\,c + a\,d + 2\,b\,d\,x)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) +$$

$$6\,b\,d\,(a+b\,x)\,(c+d\,x)\,\text{Log}[a+b\,x]\,\Big(A^2 + 2\,B^2\,n^2 + 2\,A\,B\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) +$$

$$B^2\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)^2\Big) +$$

$$3\,b\,(b\,c-a\,d)\,(c+d\,x)\,\Big(A^2 + 2\,A\,B\,n + 2\,B^2\,n^2 + B^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(A+B\,n)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] +$$

$$B^2\,n^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(A + B\,n - B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\Big) + 3\,d\,(b\,c-a\,d)$$

$$(a+b\,x)\,\Big(A^2 - 2\,A\,B\,n + 2\,B^2\,n^2 + B^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 + 2\,B\,n\,(-A+B\,n)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] +$$

$$B^2\,n^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(-A + B\,n + B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\Big) -$$

$$6\,b\,d\,(a+b\,x)\,(c+d\,x)\,\Big(A^2 + 2\,B^2\,n^2 + 2\,A\,B\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) +$$

$$B^2\,\Big(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)^2\Big)\,\text{Log}[c+d\,x]\Big)$$

Problem 200: Result more than twice size of optimal antiderivative.

$$\int \frac{\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{(a\,g + b\,g\,x)^3\,(c\,i + d\,i\,x)^2}\,\mathbb{d}x$$

Optimal (type 3, 560 leaves, 12 steps):

$$\frac{2\,A\,B\,d^3\,n\,(a+b\,x)}{(b\,c-a\,d)^4\,g^3\,i^2\,(c+d\,x)} - \frac{2\,B^2\,d^3\,n^2\,(a+b\,x)}{(b\,c-a\,d)^4\,g^3\,i^2\,(c+d\,x)} + \frac{6\,b^2\,B^2\,d\,n^2\,(c+d\,x)}{(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)} -$$

$$\frac{b^3\,B^2\,n^2\,(c+d\,x)^2}{4\,(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)^2} + \frac{2\,B^2\,d^3\,n\,(a+b\,x)\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c-a\,d)^4\,g^3\,i^2\,(c+d\,x)} +$$

$$\frac{6\,b^2\,B\,d\,n\,(c+d\,x)\,\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)} - \frac{b^3\,B\,n\,(c+d\,x)^2\,\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)^2} -$$

$$\frac{d^3\,(a+b\,x)\,\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^4\,g^3\,i^2\,(c+d\,x)} + \frac{3\,b^2\,d\,(c+d\,x)\,\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)} -$$

$$\frac{b^3\,(c+d\,x)^2\,\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)^2} + \frac{b\,d^2\,\left(A+B\,\mathrm{Log}\!\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{B\,(b\,c-a\,d)^4\,g^3\,i^2\,n}$$

Result (type 3, 1340 leaves) :

$$\frac{1}{4\,(b\,c-a\,d)^4\,g^3\,i^2\,(a+b\,x)^2\,(c+d\,x)}$$

$$\left(4\,b\,B^2\,d^2\,n^2\,(a+b\,x)^2\,(c+d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^3 + 2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\right.$$

$$\left(6\,a^2\,A\,b\,c\,d^2 - b^3\,B\,c^3\,n + 6\,a\,b^2\,B\,c^2\,d\,n - 2\,a^3\,B\,d^3\,n + 12\,a\,A\,b^2\,c\,d^2\,x + 6\,a^2\,A\,b\,d^3\,x +\right.$$

$$3\,b^3\,B\,c^2\,d\,n\,x + 12\,a\,b^2\,B\,c\,d^2\,n\,x - 6\,a^2\,b\,B\,d^3\,n\,x + 6\,A\,b^3\,c\,d^2\,x^2 + 12\,a\,A\,b^2\,d^3\,x^2 +$$

$$9\,b^3\,B\,c\,d^2\,n\,x^2 + 6\,A\,b^3\,d^3\,x^3 + 3\,b^3\,B\,d^3\,n\,x^3 + 6\,b\,B\,d^2\,(a+b\,x)^2\,(c+d\,x)\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$

$$\left.6\,b\,B\,d^2\,n\,(a+b\,x)^2\,(c+d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + 2\,b\,d\,(b\,c-a\,d)\,(a+b\,x)\,(c+d\,x)$$

$$\left(4\,A^2 + 10\,A\,B\,n + 11\,B^2\,n^2 + 4\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,B\,n\,(4\,A+5\,B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.4\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(4\,A+5\,B\,n-4\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) - b\,(b\,c-a\,d)^2$$

$$(c+d\,x)\left(2\,A^2 + 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,B\,n\,(2\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.2\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(2\,A+B\,n-2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)+$$

$$6\,b\,d^2\,(a+b\,x)^2\,(c+d\,x)\,\text{Log}[a+b\,x]\,\left(2\,A^2 + 2\,A\,B\,n + 5\,B^2\,n^2 + 2\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-\right.$$

$$2\,B\,n\,(2\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + 2\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 +$$

$$\left.2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(2\,A+B\,n-2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) + 2\,B\,(b\,c-a\,d)\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]$$

$$\left(2\,b\,d\,(a+b\,x)\,(c+d\,x)\,\left(4\,A+5\,B\,n+4\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 4\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)-\right.$$

$$b\,(b\,c-a\,d)\,(c+d\,x)\,\left(2\,A+B\,n+2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$\left.4\,d^2\,(a+b\,x)^2\,\left(A-B\,n+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) + 4\,d^2\,(b\,c-a\,d)$$

$$(a+b\,x)^2\,\left(A^2 - 2\,A\,B\,n + 2\,B^2\,n^2 + B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 2\,B\,n\,(-A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 - 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(-A+B\,n+B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) - 6\,b\,d^2\,(a+b\,x)^2$$

$$(c+d\,x)\,\left(2\,A^2 + 2\,A\,B\,n + 5\,B^2\,n^2 + 2\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,B\,n\,(2\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.\left.2\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(2\,A+B\,n-2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\,\text{Log}[c+d\,x]\right)$$

Problem 201: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g+b\,g\,x)^4\,(c\,i+d\,i\,x)^2}\,dx$$

Optimal (type 3, 729 leaves, 14 steps):

$$-\frac{2\,A\,B\,d^4\,n\,(a+b\,x)}{(b\,c-a\,d)^5\,g^4\,i^2\,(c+d\,x)}+\frac{2\,B^2\,d^4\,n^2\,(a+b\,x)}{(b\,c-a\,d)^5\,g^4\,i^2\,(c+d\,x)}-\frac{12\,b^2\,B^2\,d^2\,n^2\,(c+d\,x)}{(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)}+$$

$$\frac{b^3\,B^2\,d\,n^2\,(c+d\,x)^2}{(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^2}-\frac{2\,b^4\,B^2\,n^2\,(c+d\,x)^3}{27\,(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^3}-\frac{2\,B^2\,d^4\,n\,(a+b\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c-a\,d)^5\,g^4\,i^2\,(c+d\,x)}-$$

$$\frac{12\,b^2\,B\,d^2\,n\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)}+\frac{2\,b^3\,B\,d\,n\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^2}-$$

$$\frac{2\,b^4\,B\,n\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^3}+\frac{d^4\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^5\,g^4\,i^2\,(c+d\,x)}-$$

$$\frac{6\,b^2\,d^2\,(c+d\,x)\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)}+\frac{2\,b^3\,d\,(c+d\,x)^2\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^2}-$$

$$\frac{b^4\,(c+d\,x)^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^3}-\frac{4\,b\,d^3\,\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{3\,B\,(b\,c-a\,d)^5\,g^4\,i^2\,n}$$

Result (type 3, 1695 leaves) :

$$-\frac{1}{27\,(b\,c-a\,d)^5\,g^4\,i^2\,(a+b\,x)^3\,(c+d\,x)}$$

$$\left(36\,b\,B^2\,d^3\,n^2\,(a+b\,x)^3\,(c+d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^3+9\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\right.$$

$$\left(12\,a^3\,A\,b\,c\,d^3+b^4\,B\,c^4\,n-6\,a\,b^3\,B\,c^3\,d\,n+18\,a^2\,b^2\,B\,c^2\,d^2\,n-3\,a^4\,B\,d^4\,n+36\,a^2\,A\,b^2\,c\,d^3\,x+\right.$$

$$12\,a^3\,A\,b\,d^4\,x-2\,b^4\,B\,c^3\,d\,n\,x+18\,a\,b^3\,B\,c^2\,d^2\,n\,x+36\,a^2\,b^2\,B\,c\,d^3\,n\,x-12\,a^3\,b\,B\,d^4\,n\,x+$$

$$36\,a\,A\,b^3\,c\,d^3\,x^2+36\,a^2\,A\,b^2\,d^4\,x^2+6\,b^4\,B\,c^2\,d^2\,n\,x^2+54\,a\,b^3\,B\,c\,d^3\,n\,x^2+12\,A\,b^4\,c\,d^3\,x^3+$$

$$36\,a\,A\,b^3\,d^4\,x^3+22\,b^4\,B\,c\,d^3\,n\,x^3+18\,a\,b^3\,B\,d^4\,n\,x^3+12\,A\,b^4\,d^4\,x^4+10\,b^4\,B\,d^4\,n\,x^4+$$

$$\left.12\,b\,B\,d^3\,(a+b\,x)^3\,(c+d\,x)\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-12\,b\,B\,d^3\,n\,(a+b\,x)^3\,(c+d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)+$$

$$3\,b\,d^2\,(b\,c-a\,d)\,(a+b\,x)^2\,(c+d\,x)\left(27\,A^2+78\,A\,B\,n+92\,B^2\,n^2+27\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-\right.$$

$$6\,B\,n\,(9\,A+13\,B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+27\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]$$

$$\left.\left(9\,A+13\,B\,n-9\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)+6\,b\,d^3\,(a+b\,x)^3\,(c+d\,x)\,\text{Log}\left[a+b\,x\right]$$

$$\left(18\,A^2+30\,A\,B\,n+55\,B^2\,n^2+18\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-6\,B\,n\,(6\,A+5\,B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+\right.$$

$$\left.18\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(6\,A+5\,B\,n-6\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)+$$

$$b\,(b\,c-a\,d)^3\,(c+d\,x)\left(9\,A^2+6\,A\,B\,n+2\,B^2\,n^2+9\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-6\,B\,n\,(3\,A+B\,n)\right.$$

$$\left.\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+9\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\left(3\,A+B\,n-3\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)-$$

$$3\,b\,d\,(b\,c-a\,d)^2\,(a+b\,x)\,(c+d\,x)\left(9\,A^2+12\,A\,B\,n+7\,B^2\,n^2+9\,B^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-\right.$$

$$6 \, B \, n \, (3 \, A + 2 \, B \, n) \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right] + 9 \, B^2 \, n^2 \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]^2 +$$

$$6 \, B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] \, \left(3 \, A + 2 \, B \, n - 3 \, B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right)\right) + 6 \, B \, (b \, c - a \, d) \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]$$

$$\left(3 \, b \, d^2 \, (a + b \, x)^2 \, (c + d \, x) \, \left(9 \, A + 13 \, B \, n + 9 \, B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] - 9 \, B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right) +$$

$$b \, (b \, c - a \, d)^2 \, (c + d \, x) \, \left(3 \, A + B \, n + 3 \, B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] - 3 \, B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right) -$$

$$3 \, b \, d \, (b \, c - a \, d) \, (a + b \, x) \, (c + d \, x) \, \left(3 \, A + 2 \, B \, n + 3 \, B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] - 3 \, B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right) +$$

$$9 \, d^3 \, (a + b \, x)^3 \, \left(A - B \, n + B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] - B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right)\right) + 27 \, d^3 \, (b \, c - a \, d)$$

$$(a + b \, x)^3 \, \left(A^2 - 2 \, A \, B \, n + 2 \, B^2 \, n^2 + B^2 \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right]^2 + 2 \, B \, n \, (-A + B \, n) \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right] +$$

$$B^2 \, n^2 \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]^2 - 2 \, B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] \, \left(-A + B \, n + B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right)\right) - 6 \, b \, d^3 \, (a + b \, x)^3$$

$$(c + d \, x) \, \left(18 \, A^2 + 30 \, A \, B \, n + 55 \, B^2 \, n^2 + 18 \, B^2 \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right]^2 - 6 \, B \, n \, (6 \, A + 5 \, B \, n) \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right] +$$

$$18 \, B^2 \, n^2 \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]^2 + 6 \, B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right] \, \left(6 \, A + 5 \, B \, n - 6 \, B \, n \, \text{Log}\left[\frac{a + b \, x}{c + d \, x}\right]\right)\right) \, \text{Log}[c + d \, x]\right)$$

Problem 202: Result more than twice size of optimal antiderivative.

$$\int \frac{(a \, g + b \, g \, x)^3 \, \left(A + B \, \text{Log}\left[e \, \left(\frac{a + b \, x}{c + d \, x}\right)^n\right]\right)^2}{(c \, i + d \, i \, x)^3} \, dx$$

Optimal (type 4, 676 leaves, 14 steps):

$$\frac{B^2 \left(b\, c - a\, d\right) g^3\, n^2\, \left(a + b\, x\right)^2}{4\, d^2\, i^3\, \left(c + d\, x\right)^2} - \frac{4\, A\, b\, B\, \left(b\, c - a\, d\right) g^3\, n\, \left(a + b\, x\right)}{d^3\, i^3\, \left(c + d\, x\right)} +$$

$$\frac{4\, b\, B^2\, \left(b\, c - a\, d\right) g^3\, n^2\, \left(a + b\, x\right)}{d^3\, i^3\, \left(c + d\, x\right)} - \frac{4\, b\, B^2\, \left(b\, c - a\, d\right) g^3\, n\, \left(a + b\, x\right) \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^3\, i^3\, \left(c + d\, x\right)} -$$

$$\frac{B\, \left(b\, c - a\, d\right) g^3\, n\, \left(a + b\, x\right)^2 \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\, d^2\, i^3\, \left(c + d\, x\right)^2} + \frac{b^2\, g^3\, \left(a + b\, x\right) \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^3\, i^3} +$$

$$\frac{\left(b\, c - a\, d\right) g^3\, \left(a + b\, x\right)^2 \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\, d^2\, i^3\, \left(c + d\, x\right)^2} + \frac{2\, b\, \left(b\, c - a\, d\right) g^3\, \left(a + b\, x\right) \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^3\, i^3\, \left(c + d\, x\right)} +$$

$$\frac{2\, b^2\, B\, \left(b\, c - a\, d\right) g^3\, n\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right) \text{Log}\left[\frac{b\,c-a\,d}{b\,\left(c+d\,x\right)}\right]}{d^4\, i^3} +$$

$$\frac{3\, b^2\, \left(b\, c - a\, d\right) g^3\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2 \text{Log}\left[\frac{b\,c-a\,d}{b\,\left(c+d\,x\right)}\right]}{d^4\, i^3} +$$

$$\frac{2\, b^2\, B^2\, \left(b\, c - a\, d\right) g^3\, n^2\, \text{PolyLog}\left[2, \frac{d\,\left(a+b\,x\right)}{b\,\left(c+d\,x\right)}\right]}{d^4\, i^3} +$$

$$\frac{6\, b^2\, B\, \left(b\, c - a\, d\right) g^3\, n\, \left(A + B\, \text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right) \text{PolyLog}\left[2, \frac{d\,\left(a+b\,x\right)}{b\,\left(c+d\,x\right)}\right]}{d^4\, i^3} -$$

$$\frac{6\, b^2\, B^2\, \left(b\, c - a\, d\right) g^3\, n^2\, \text{PolyLog}\left[3, \frac{d\,\left(a+b\,x\right)}{b\,\left(c+d\,x\right)}\right]}{d^4\, i^3}$$

Result (type 4, 6600 leaves):

$$\frac{b^3\, g^3\, x\, \left(A + B\, \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2}{d^3\, i^3} - \frac{1}{d^4\, i^3\, \left(c + d\, x\right)}$$

$$3 \left(A^2\, b^3\, c^2\, g^3 - 2\, a\, A^2\, b^2\, c\, d\, g^3 + a^2\, A^2\, b\, d^2\, g^3 + 2\, A\, b^3\, B\, c^2\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - \right.$$

$$4\, a\, A\, b^2\, B\, c\, d\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +$$

$$2\, a^2\, A\, b\, B\, d^2\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +$$

$$b^3\, B^2\, c^2\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 - 2\, a\, b^2\, B^2\, c\, d\, g^3$$

$$\left.\left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 + a^2\, b\, B^2\, d^2\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right) +$$

$$\frac{1}{2\, d^4\, i^3\, \left(c + d\, x\right)^2} \left(A^2\, b^3\, c^3\, g^3 - 3\, a\, A^2\, b^2\, c^2\, d\, g^3 + 3\, a^2\, A^2\, b\, c\, d^2\, g^3 - a^3\, A^2\, d^3\, g^3 + \right.$$

$$2\, A\, b^3\, B\, c^3\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) -$$

$$6\, a\, A\, b^2\, B\, c^2\, d\, g^3 \left(\text{Log}\left[e\, \left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\, \text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +$$

$$6 \, a^2 \, A \, b \, B \, c \, d^2 \, g^3 \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right) -$$

$$2 \, a^3 \, A \, B \, d^3 \, g^3 \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right) +$$

$$b^3 \, B^2 \, c^3 \, g^3 \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right)^2 -$$

$$3 \, a \, b^2 \, B^2 \, c^2 \, d \, g^3 \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right)^2 +$$

$$3 \, a^2 \, b \, B^2 \, c \, d^2 \, g^3 \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right)^2 -$$

$$a^3 \, B^2 \, d^3 \, g^3 \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right)^2 \right) - \frac{1}{d^4 \, i^3}$$

$$3 \, b^2 \, (b\,c - a\,d) \, g^3 \, \left(A + B \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right) \right)^2 \, \text{Log} [c+d\,x] +$$

$$\left(a^3 \, B^2 \, g^3 \, n^2 \, \left(-7 \, b^2 \, c^2 + 8 \, a \, b \, c \, d - a^2 \, d^2 - 6 \, b^2 \, c \, d \, x + 6 \, a \, b \, d^2 \, x - 6 \, b^2 \, (c+d\,x)^2 \, \text{Log} [a+b\,x] + \right. \right.$$

$$2 \, (b\,c - a\,d) \, (3\,b\,c - a\,d + 2\,b\,d\,x) \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] - 2 \, d \, (a+b\,x) \, (-2\,b\,c + a\,d - b\,d\,x)$$

$$\left. \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right]^2 + 6 \, b^2 \, c^2 \, \text{Log} [c+d\,x] + 12 \, b^2 \, c \, d \, x \, \text{Log} [c+d\,x] + 6 \, b^2 \, d^2 \, x^2 \, \text{Log} [c+d\,x] \right) \right) \Big/$$

$$\left(4 \, d \, (b\,c - a\,d)^2 \, i^3 \, (c+d\,x)^2 \right) + \frac{1}{i^3} 2 \, a^3 \, B \, g^3 \, n \, \left(A + B \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right) \right)$$

$$\left(\frac{\left(\frac{c}{d} + x \right) \, \left(2 \, \text{Log} \left[\frac{c}{d} + x \right] + 4 \, \text{Log} \left[\frac{c}{d} + x \right]^2 \right)}{8 \, (c+d\,x)^3 \, \text{Log} \left[\frac{c}{d} + x \right]} + \frac{1}{2\,d} \right.$$

$$\left(\left(\frac{d \, \left(\frac{a}{b} + x \right)}{\left(-c + \frac{a\,d}{b} \right)^3 \, \left(1 - \frac{d \left(\frac{a}{b} + x \right)}{-c + \frac{a\,d}{b}} \right)} - \left(\frac{d^2 \, \left(\frac{a}{b} + x \right)^2}{\left(-c + \frac{a\,d}{b} \right)^4 \, \left(1 - \frac{d \left(\frac{a}{b} + x \right)}{-c + \frac{a\,d}{b}} \right)^2} + \frac{2 \, d \, \left(\frac{a}{b} + x \right)}{\left(-c + \frac{a\,d}{b} \right)^3 \, \left(1 - \frac{d \left(\frac{a}{b} + x \right)}{-c + \frac{a\,d}{b}} \right)} \right) \right) \, \text{Log} \left[\frac{a}{b} + x \right] -$$

$$\frac{\text{Log} \left[1 - \frac{d \left(\frac{a}{b} + x \right)}{-c + \frac{a\,d}{b}} \right]}{\left(-c + \frac{a\,d}{b} \right)^2} \right) - \frac{- \text{Log} \left[\frac{a}{b} + x \right] + \text{Log} \left[\frac{c}{d} + x \right] + \text{Log} \left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x} \right]}{2 \, d \, (c+d\,x)^2} +$$

$$\frac{1}{i^3} 6 \, a^2 \, b \, B \, g^3 \, n \, \left(A + B \, \left(\text{Log} \left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] - n \, \text{Log} \left[\frac{a+b\,x}{c+d\,x} \right] \right) \right)$$

$$\left(\frac{1 + \text{Log} \left[\frac{c}{d} + x \right]}{d^2 \, (c+d\,x)} - \frac{c \, \left(1 + 2 \, \text{Log} \left[\frac{c}{d} + x \right] \right)}{4 \, d^2 \, (c+d\,x)^2} + \frac{-\frac{\text{Log} \left[\frac{a}{b} + x \right]}{d \, (c+d\,x)} - \frac{b \, \text{Log} [a+b\,x]}{d \, (-b\,c + a\,d)} + \frac{b \, \text{Log} [c+d\,x]}{d \, (-b\,c + a\,d)}}{d} - \right.$$

$$\frac{c \, \left(-\text{Log} \left[\frac{a}{b} + x \right] + \frac{b \, (c+d\,x) \, (b\,c - a\,d + b \, (c+d\,x) \, \text{Log} [a+b\,x] - b \, (c+d\,x) \, \text{Log} [c+d\,x])}{(b\,c - a\,d)^2} \right)}{2 \, d^2 \, (c+d\,x)^2} -$$

$$\frac{(c + 2\,d\,x)\,\left(-\mathrm{Log}\left[\frac{a}{b} + x\right] + \mathrm{Log}\left[\frac{c}{d} + x\right] + \mathrm{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)}{2\,d^2\,(c + d\,x)^2}\Bigg) +$$

$$\frac{1}{i^3}\,2\,b^3\,B\,g^3\,n\,\left(A + B\,\left(\mathrm{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] - n\,\mathrm{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)\right)$$

$$\Bigg(\frac{\left(\frac{a}{b} + x\right)\,\left(-1 + \mathrm{Log}\left[\frac{a}{b} + x\right]\right)}{d^3} - \frac{\left(\frac{c}{d} + x\right)\,\left(-1 + \mathrm{Log}\left[\frac{c}{d} + x\right]\right)}{d^3} + \frac{3\,c\,\mathrm{Log}\left[\frac{c}{d} + x\right]^2}{2\,d^4} +$$

$$\frac{3\,c^2\,\left(1 + \mathrm{Log}\left[\frac{c}{d} + x\right]\right)}{d^4\,(c + d\,x)} - \frac{c^3\,\left(1 + 2\,\mathrm{Log}\left[\frac{c}{d} + x\right]\right)}{4\,d^4\,(c + d\,x)^2} + \frac{3\,c^2\,\left(-\frac{\mathrm{Log}\left[\frac{a}{b} + x\right]}{d\,(c+d\,x)} - \frac{b\,\mathrm{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\mathrm{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^3} -$$

$$\frac{c^3\,\left(-\mathrm{Log}\left[\frac{a}{b} + x\right] + \frac{b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\mathrm{Log}[a+b\,x]-b\,(c+d\,x)\,\mathrm{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,d^4\,(c + d\,x)^2} - \frac{1}{2\,d^4}$$

$$\left(-2\,d\,x + \frac{c^2\,(5\,c + 6\,d\,x)}{(c + d\,x)^2} + 6\,c\,\mathrm{Log}[c + d\,x]\right)\,\left(-\mathrm{Log}\left[\frac{a}{b} + x\right] + \mathrm{Log}\left[\frac{c}{d} + x\right] +$$

$$\mathrm{Log}\left[\frac{a}{c + d\,x} + \frac{b\,x}{c + d\,x}\right]\right) - \frac{3\,c\,\left(\mathrm{Log}\left[\frac{a}{b} + x\right]\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \mathrm{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^4}\Bigg) +$$

$$\frac{1}{i^3}\,6\,a\,b^2\,B\,g^3\,n\,\left(A + B\,\left(\mathrm{Log}\left[e\,\left(\frac{a + b\,x}{c + d\,x}\right)^n\right] - n\,\mathrm{Log}\left[\frac{a + b\,x}{c + d\,x}\right]\right)\right)\,\Bigg(-\frac{\mathrm{Log}\left[\frac{c}{d} + x\right]^2}{2\,d^3} -$$

$$\frac{2\,c\,\left(1 + \mathrm{Log}\left[\frac{c}{d} + x\right]\right)}{d^3\,(c + d\,x)} + \frac{c^2\,\left(1 + 2\,\mathrm{Log}\left[\frac{c}{d} + x\right]\right)}{4\,d^3\,(c + d\,x)^2} - \frac{2\,c\,\left(-\frac{\mathrm{Log}\left[\frac{a}{b} + x\right]}{d\,(c+d\,x)} - \frac{b\,\mathrm{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\mathrm{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^2} +$$

$$\frac{c^2\,\left(-\mathrm{Log}\left[\frac{a}{b} + x\right] + \frac{b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\mathrm{Log}[a+b\,x]-b\,(c+d\,x)\,\mathrm{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,d^3\,(c + d\,x)^2} + \frac{1}{2\,d^3}$$

$$\left(\frac{c\,(3\,c + 4\,d\,x)}{(c + d\,x)^2} + 2\,\mathrm{Log}[c + d\,x]\right)\,\left(-\mathrm{Log}\left[\frac{a}{b} + x\right] + \mathrm{Log}\left[\frac{c}{d} + x\right] + \mathrm{Log}\left[\frac{a}{c + d\,x} + \frac{b\,x}{c + d\,x}\right]\right) +$$

$$\frac{\mathrm{Log}\left[\frac{a}{b} + x\right]\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \mathrm{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^3}\Bigg) +$$

$$\frac{1}{i^3} \, 3 \, a^2 \, b \, B^2 \, g^3 \, n^2 \left(-\frac{2 + 2 \, \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{c}{d} + x\right]^2}{d^2 \, (c + d \, x)} + \frac{c \left(1 + 2 \, \text{Log}\left[\frac{c}{d} + x\right] + 2 \, \text{Log}\left[\frac{c}{d} + x\right]^2\right)}{4 \, d^2 \, (c + d \, x)^2} + \right.$$

$$2 \left(\frac{1 + \text{Log}\left[\frac{c}{d} + x\right]}{d^2 \, (c + d \, x)} - \frac{c \left(1 + 2 \, \text{Log}\left[\frac{c}{d} + x\right]\right)}{4 \, d^2 \, (c + d \, x)^2} + \frac{-\frac{\text{Log}\left[\frac{a}{b} + x\right]}{d \, (c + d \, x)} - \frac{b \, \text{Log}[a + b \, x]}{d \, (-b \, c + a \, d)} + \frac{b \, \text{Log}[c + d \, x]}{d \, (-b \, c + a \, d)}}{d} - \frac{1}{2 \, d^2 \, (c + d \, x)^2} \right.$$

$$c \left(-\text{Log}\left[\frac{a}{b} + x\right] + \frac{1}{(b \, c - a \, d)^2} b \, (c + d \, x) \, (b \, c - a \, d + b \, (c + d \, x) \, \text{Log}[a + b \, x] - \right.$$

$$\left.\left. b \, (c + d \, x) \, \text{Log}[c + d \, x]) \right) \right) \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c + d \, x} + \frac{b \, x}{c + d \, x}\right] \right) -$$

$$\frac{(c + 2 \, d \, x) \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c + d \, x} + \frac{b \, x}{c + d \, x}\right] \right)^2}{2 \, d^2 \, (c + d \, x)^2} + \left(-d \, (a + b \, x) \, \text{Log}\left[\frac{a}{b} + x\right]^2 + \right.$$

$$2 \, b \, (c + d \, x) \, \text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] + 2 \, b \, (c + d \, x) \, \text{PolyLog}\left[2, \frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] \right) \Bigg/$$

$$(d^2 \, (-b \, c + a \, d) \, (c + d \, x)) + \left(c \left(d \, (a + b \, x) \, (a \, d - b \, (2 \, c + d \, x)) \, \text{Log}\left[\frac{a}{b} + x\right]^2 - \right. \right.$$

$$2 \, b^2 \, (c + d \, x)^2 \, \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] + 2 \, b \, (c + d \, x) \, \text{Log}\left[\frac{a}{b} + x\right]$$

$$\left(d \, (a + b \, x) + b \, (c + d \, x) \, \text{Log}\left[\frac{b \, (c + d \, x)}{b \, c - a \, d}\right] \right) + 2 \, b^2 \, (c + d \, x)^2 \, \text{PolyLog}\left[2, \frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] \Bigg) \Bigg/$$

$$\left(2 \, d^2 \, (b \, c - a \, d)^2 \, (c + d \, x)^2 \right) - 2 \left(\left(2 \, (b \, c - a \, d) \, \text{Log}\left[\frac{a}{b} + x\right] \left(1 + \text{Log}\left[\frac{c}{d} + x\right] \right) + b \, (c + d \, x) \right. \right.$$

$$\left(\text{Log}\left[\frac{c}{d} + x\right]^2 - 2 \, \text{Log}[a + b \, x] - 2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] + 2 \, \text{Log}[c + d \, x] \right) -$$

$$2 \, b \, (c + d \, x) \, \text{PolyLog}\left[2, \frac{b \, (c + d \, x)}{b \, c - a \, d}\right] \Bigg) \Bigg/ \left(2 \, d^2 \, (-b \, c + a \, d) \, (c + d \, x) \right) +$$

$$\left(c \left(-b \, (b \, c - a \, d) \, (c + d \, x) + (b \, c - a \, d)^2 \, \text{Log}\left[\frac{a}{b} + x\right] \left(1 + 2 \, \text{Log}\left[\frac{c}{d} + x\right] \right) - b^2 \, (c + d \, x)^2 \right. \right.$$

$$\text{Log}[a + b \, x] + b^2 \, (c + d \, x)^2 \, \text{Log}[c + d \, x] + b \, (c + d \, x) \left(b \, (c + d \, x) \, \text{Log}\left[\frac{c}{d} + x\right]^2 - \right.$$

$$2 \, (b \, c - a \, d) \left(1 + \text{Log}\left[\frac{c}{d} + x\right] \right) - 2 \, b \, (c + d \, x) \left(\text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] + \right.$$

$$\left. \left. \left. \left. \text{PolyLog}\left[2, \frac{b \, (c + d \, x)}{b \, c - a \, d}\right] \right) \right) \right) \right) \Bigg/ \left(4 \, d^2 \, (b \, c - a \, d)^2 \, (c + d \, x)^2 \right) \Bigg) +$$

$$\frac{1}{i^3} b^3 B^2 g^3 n^2 \left(\frac{(a+b\,x)\left(2 - 2\,\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{a}{b}+x\right]^2\right)}{b\,d^3} - \frac{c\,\mathrm{Log}\left[\frac{c}{d}+x\right]^3}{d^4} + \right.$$

$$\frac{(c+d\,x)\left(2 - 2\,\mathrm{Log}\left[\frac{c}{d}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^4} - \frac{3\,c^2\left(2 + 2\,\mathrm{Log}\left[\frac{c}{d}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^4\,(c+d\,x)} +$$

$$\frac{c^3\left(1 + 2\,\mathrm{Log}\left[\frac{c}{d}+x\right] + 2\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^4\,(c+d\,x)^2} - \frac{1}{2\,d^4}\left(-2\,d\,x + \frac{c^2\,(5\,c+6\,d\,x)}{(c+d\,x)^2} + 6\,c\,\mathrm{Log}[c+d\,x]\right)$$

$$\left(-\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right] + \mathrm{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 +$$

$$\left(3\,c^2\left(-d\,(a+b\,x)\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2 + 2\,b\,(c+d\,x)\,\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \right.\right.$$

$$\left.\left. 2\,b\,(c+d\,x)\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) \Big/ \left(d^4\,(-b\,c+a\,d)\,(c+d\,x)\right) +$$

$$\left(c^3\left(d\,(a+b\,x)\,(a\,d - b\,(2\,c+d\,x))\,\mathrm{Log}\left[\frac{a}{b}+x\right]^2 - 2\,b^2\,(c+d\,x)^2\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \right.\right.$$

$$2\,b\,(c+d\,x)\,\mathrm{Log}\left[\frac{a}{b}+x\right]\left(d\,(a+b\,x) + b\,(c+d\,x)\,\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right) +$$

$$\left.\left. 2\,b^2\,(c+d\,x)^2\,\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) \Big/$$

$$\left(2\,d^4\,(b\,c-a\,d)^2\,(c+d\,x)^2\right) + 2\left(-\mathrm{Log}\left[\frac{a}{b}+x\right] + \mathrm{Log}\left[\frac{c}{d}+x\right] + \mathrm{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)$$

$$\left(\frac{\left(\frac{a}{b}+x\right)\left(-1 + \mathrm{Log}\left[\frac{a}{b}+x\right]\right)}{d^3} - \frac{\left(\frac{c}{d}+x\right)\left(-1 + \mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{d^3} + \frac{3\,c\,\mathrm{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^4} + \right.$$

$$\frac{3\,c^2\left(1 + \mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{d^4\,(c+d\,x)} - \frac{c^3\left(1 + 2\,\mathrm{Log}\left[\frac{c}{d}+x\right]\right)}{4\,d^4\,(c+d\,x)^2} + \frac{3\,c^2\left(-\frac{\mathrm{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)} - \frac{b\,\mathrm{Log}[a+b\,x]}{d\,(-b\,c+a\,d)} + \frac{b\,\mathrm{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^3} -$$

$$\frac{1}{2\,d^4\,(c+d\,x)^2}c^3\left(-\mathrm{Log}\left[\frac{a}{b}+x\right] + \frac{1}{(b\,c-a\,d)^2}b\,(c+d\,x)\left(b\,c - a\,d + b\,(c+d\,x)\,\mathrm{Log}[a+b\,x] - \right.\right.$$

$$\left.\left. b\,(c+d\,x)\,\mathrm{Log}[c+d\,x]\right)\right) - \frac{3\,c\left(\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + \mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)}{d^4} -$$

$$\frac{1}{d^4}3\,c\left(\mathrm{Log}\left[\frac{a}{b}+x\right]^2\mathrm{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 2\,\mathrm{Log}\left[\frac{a}{b}+x\right]\mathrm{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) -$$

$$2 \, \text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) - 2\left(\frac{1}{b\,d^4}\left(a\,d + 2\,b\,d\,x - b\,d\,x\,\text{Log}\left[\frac{c}{d}+x\right] - b\,c\,\text{Log}[c+d\,x] + \right.\right.$$

$$\text{Log}\left[\frac{a}{b}+x\right]\left(-d\,(a+b\,x) + d\,(a+b\,x)\,\text{Log}\left[\frac{c}{d}+x\right] + (b\,c - a\,d)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right) +$$

$$(b\,c - a\,d)\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) + \left(3\,c^2\left(2\,(b\,c - a\,d)\,\text{Log}\left[\frac{a}{b}+x\right]\left(1 + \text{Log}\left[\frac{c}{d}+x\right]\right) + \right.\right.$$

$$b\,(c+d\,x)\left(\text{Log}\left[\frac{c}{d}+x\right]^2 - 2\,\text{Log}[a+b\,x] - 2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 2\,\text{Log}[c + \right.$$

$$\left.\left.d\,x]\right) - 2\,b\,(c+d\,x)\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)\right) \Big/ \left(2\,d^4\,(-b\,c + a\,d)\,(c+d\,x)\right) +$$

$$\left(c^3\left(-b\,(b\,c - a\,d)\,(c+d\,x) + (b\,c - a\,d)^2\,\text{Log}\left[\frac{a}{b}+x\right]\left(1 + 2\,\text{Log}\left[\frac{c}{d}+x\right]\right) - \right.$$

$$b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x] + b^2\,(c+d\,x)^2\,\text{Log}[c+d\,x] +$$

$$b\,(c+d\,x)\left(b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 2\,(b\,c - a\,d)\left(1 + \text{Log}\left[\frac{c}{d}+x\right]\right) - \right.$$

$$\left.\left.2\,b\,(c+d\,x)\left(\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)\right)\right)\right) \Big/$$

$$\left(4\,d^4\,(b\,c - a\,d)^2\,(c+d\,x)^2\right) - \frac{1}{2\,d^4}3\,c\left(\text{Log}\left[\frac{c}{d}+x\right]^2\left(\text{Log}\left[\frac{a}{b}+x\right] - \text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) - \right.$$

$$\left.\left.2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right] + 2\,\text{PolyLog}\left[3, \frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right)\right)\right) +$$

$$\frac{1}{i^3}\,3\,a\,b^2\,B^2\,g^3\,n^2\left(\frac{\text{Log}\left[\frac{c}{d}+x\right]^3}{3\,d^3} + \frac{2\,c\left(2 + 2\,\text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{c}{d}+x\right]^2\right)}{d^3\,(c+d\,x)} - \right.$$

$$\frac{c^2\left(1 + 2\,\text{Log}\left[\frac{c}{d}+x\right] + 2\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^3\,(c+d\,x)^2} + \frac{1}{2\,d^3}$$

$$\left(\frac{c\,(3\,c + 4\,d\,x)}{(c+d\,x)^2} + 2\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right] + \text{Log}\left[\frac{c}{d}+x\right] + \text{Log}\left[\frac{a}{c+d\,x} + \frac{b\,x}{c+d\,x}\right]\right)^2 - $$

$$\left(2\,c\left(-d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 2\,b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right] + \right.\right.$$

$$\left.\left.2\,b\,(c+d\,x)\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right) \Big/ \left(d^3\,(-b\,c + a\,d)\,(c+d\,x)\right) - $$

$$\left(c^2\left(d\,(a+b\,x)\,(a\,d - b\,(2\,c + d\,x))\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 2\,b^2\,(c+d\,x)^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right] + \right.\right.$$

$$2\,b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]\left(d\,(a+b\,x) + b\,(c+d\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c - a\,d}\right]\right) +$$

$$2 b^2 (c + d x)^2 \, \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]\right)\right) \Big/$$

$$\left(2 d^3 (b c - a d)^2 (c + d x)^2\right) + 2 \left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c + d x} + \frac{b x}{c + d x}\right]\right)$$

$$\left(-\frac{\text{Log}\left[\frac{c}{d} + x\right]^2}{2 d^3} - \frac{2 c \left(1 + \text{Log}\left[\frac{c}{d} + x\right]\right)}{d^3 (c + d x)} + \frac{c^2 \left(1 + 2 \text{Log}\left[\frac{c}{d} + x\right]\right)}{4 d^3 (c + d x)^2} - \right.$$

$$\frac{2 c \left(-\frac{\text{Log}\left[\frac{a}{b} + x\right]}{d (c + d x)} - \frac{b \, \text{Log}[a + b x]}{d (-b c + a d)} + \frac{b \, \text{Log}[c + d x]}{d (-b c + a d)}\right)}{d^2} + \frac{1}{2 d^3 (c + d x)^2} c^2 \left(-\text{Log}\left[\frac{a}{b} + x\right] + \frac{1}{(b c - a d)^2}\right.$$

$$\left. b (c + d x) \left(b c - a d + b (c + d x) \, \text{Log}[a + b x] - b (c + d x) \, \text{Log}[c + d x]\right)\right) +$$

$$\frac{\text{Log}\left[\frac{a}{b} + x\right] \text{Log}\left[\frac{b (c + d x)}{b c - a d}\right] + \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right]}{d^3} + \frac{1}{d^3}\left(\text{Log}\left[\frac{a}{b} + x\right]^2 \text{Log}\left[\frac{b (c + d x)}{b c - a d}\right] + \right.$$

$$\left. 2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{PolyLog}\left[2, \frac{d (a + b x)}{-b c + a d}\right] - 2 \, \text{PolyLog}\left[3, \frac{d (a + b x)}{-b c + a d}\right]\right) -$$

$$2 \left(-\left(\left(c \left(2 (b c - a d) \, \text{Log}\left[\frac{a}{b} + x\right] \left(1 + \text{Log}\left[\frac{c}{d} + x\right]\right) + b (c + d x)\right.\right.\right.$$

$$\left. \left(\text{Log}\left[\frac{c}{d} + x\right]^2 - 2 \, \text{Log}[a + b x] - 2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] + 2 \, \text{Log}[c + d x]\right) - 2$$

$$\left. b (c + d x) \, \text{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right]\right)\right) \Big/ \left(d^3 (-b c + a d) (c + d x)\right)\right) -$$

$$\left(c^2 \left(-b (b c - a d) (c + d x) + (b c - a d)^2 \, \text{Log}\left[\frac{a}{b} + x\right] \left(1 + 2 \, \text{Log}\left[\frac{c}{d} + x\right]\right) - \right.\right.$$

$$b^2 (c + d x)^2 \, \text{Log}[a + b x] + b^2 (c + d x)^2 \, \text{Log}[c + d x] +$$

$$b (c + d x) \left(b (c + d x) \, \text{Log}\left[\frac{c}{d} + x\right]^2 - 2 (b c - a d) \left(1 + \text{Log}\left[\frac{c}{d} + x\right]\right) - \right.$$

$$\left.\left. 2 b (c + d x) \left(\text{Log}\left[\frac{c}{d} + x\right] \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] + \text{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right]\right)\right)\right)\right) \Big/$$

$$\left(4 d^3 (b c - a d)^2 (c + d x)^2\right) + \frac{1}{2 d^3}\left(\text{Log}\left[\frac{c}{d} + x\right]^2 \left(\text{Log}\left[\frac{a}{b} + x\right] - \text{Log}\left[\frac{d (a + b x)}{-b c + a d}\right]\right) - \right.$$

$$\left. 2 \, \text{Log}\left[\frac{c}{d} + x\right] \text{PolyLog}\left[2, \frac{b (c + d x)}{b c - a d}\right] + 2 \, \text{PolyLog}\left[3, \frac{b (c + d x)}{b c - a d}\right]\right)\right)$$

Problem 203: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)^2 \left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(c\,i + d\,i\,x)^3}\,dx$$

Optimal (type 4, 441 leaves, 11 steps):

$$-\frac{B^2\,g^2\,n^2\,(a+b\,x)^2}{4\,d\,i^3\,(c+d\,x)^2} + \frac{2\,A\,b\,B\,g^2\,n\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)} - \frac{2\,b\,B^2\,g^2\,n^2\,(a+b\,x)}{d^2\,i^3\,(c+d\,x)} + \frac{2\,b\,B^2\,g^2\,n\,(a+b\,x)\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^2\,i^3\,(c+d\,x)} +$$

$$\frac{B\,g^2\,n\,(a+b\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,d\,i^3\,(c+d\,x)^2} - \frac{g^2\,(a+b\,x)^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,d\,i^3\,(c+d\,x)^2} -$$

$$\frac{b\,g^2\,(a+b\,x)\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{d^2\,i^3\,(c+d\,x)} - \frac{b^2\,g^2\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{d^3\,i^3} -$$

$$\frac{2\,b^2\,B\,g^2\,n\,\left(A + B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^3\,i^3} + \frac{2\,b^2\,B^2\,g^2\,n^2\,\text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{d^3\,i^3}$$

Result (type 4, 4247 leaves):

$$-\frac{1}{d^3\,i^3\,(c+d\,x)}$$

$$2\left(-A^2\,b^2\,c\,g^2 + a\,A^2\,b\,d\,g^2 - 2\,A\,b^2\,B\,c\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + 2\,a\,A\,b\,B\,d\,g^2\right.$$

$$\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) - b^2\,B^2\,c\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 +$$

$$\left.a\,b\,B^2\,d\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right) + \frac{1}{2\,d^3\,i^3\,(c+d\,x)^2}$$

$$\left(-A^2\,b^2\,c^2\,g^2 + 2\,a\,A^2\,b\,c\,d\,g^2 - a^2\,A^2\,d^2\,g^2 - 2\,A\,b^2\,B\,c^2\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +\right.$$

$$4\,a\,A\,b\,B\,c\,d\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) -$$

$$2\,a^2\,A\,B\,d^2\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) -$$

$$b^2\,B^2\,c^2\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 + 2\,a\,b\,B^2\,c\,d\,g^2$$

$$\left.\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2 - a^2\,B^2\,d^2\,g^2\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)^2\right) +$$

$$\frac{b^2\,g^2\,\left(A + B\left(\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)^2\,\text{Log}[c+d\,x]}{d^3\,i^3} +$$

$$\left(a^2\,B^2\,g^2\,n^2\left(-7\,b^2\,c^2 + 8\,a\,b\,c\,d - a^2\,d^2 - 6\,b^2\,c\,d\,x + 6\,a\,b\,d^2\,x - 6\,b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x] +\right.\right.$$

$$\left.2\,(b\,c - a\,d)\,(3\,b\,c - a\,d + 2\,b\,d\,x)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] - 2\,d\,(a+b\,x)\,(-2\,b\,c + a\,d - b\,d\,x)\right)$$

$$\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + 6\,b^2\,c^2\,\text{Log}[c+d\,x] + 12\,b^2\,c\,d\,x\,\text{Log}[c+d\,x] + 6\,b^2\,d^2\,x^2\,\text{Log}[c+d\,x]\Bigg)\Bigg) \Bigg/$$

$$\left(4\,d\,(b\,c-a\,d)^2\,i^3\,(c+d\,x)^2\right) + \frac{1}{i^3}2\,a^2\,B\,g^2\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{\left(\frac{c}{d}+x\right)\left(2\,\text{Log}\left[\frac{c}{d}+x\right]+4\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{8\,(c+d\,x)^3\,\text{Log}\left[\frac{c}{d}+x\right]} + \frac{1}{2\,d}\right.$$

$$\left(\frac{d\left(\frac{a}{b}+x\right)}{\left(-c+\frac{a\,d}{b}\right)^3\left(1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right)} - \left(\frac{d^2\left(\frac{a}{b}+x\right)^2}{\left(-c+\frac{a\,d}{b}\right)^4\left(1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right)^2} + \frac{2\,d\left(\frac{a}{b}+x\right)}{\left(-c+\frac{a\,d}{b}\right)^3\left(1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right)}\right)\text{Log}\left[\frac{a}{b}+x\right] - \right.$$

$$\left.\frac{\text{Log}\left[1-\frac{d\left(\frac{a}{b}+x\right)}{-c+\frac{a\,d}{b}}\right]}{\left(-c+\frac{a\,d}{b}\right)^2}\right) - \frac{-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]}{2\,d\,(c+d\,x)^2}\right) +$$

$$\frac{1}{i^3}4\,a\,b\,B\,g^2\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(\frac{1+\text{Log}\left[\frac{c}{d}+x\right]}{d^2\,(c+d\,x)} - \frac{c\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{4\,d^2\,(c+d\,x)^2} + \frac{-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}}{d} - \right.$$

$$\frac{c\left(-\text{Log}\left[\frac{a}{b}+x\right]+\frac{b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}[a+b\,x]-b\,(c+d\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,d^2\,(c+d\,x)^2} - $$

$$\left.\frac{(c+2\,d\,x)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)}{2\,d^2\,(c+d\,x)^2}\right) +$$

$$\frac{1}{i^3}2\,b^2\,B\,g^2\,n\left(A + B\left(\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)$$

$$\left(-\frac{\text{Log}\left[\frac{c}{d}+x\right]^2}{2\,d^3} - \frac{2\,c\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)}{d^3\,(c+d\,x)} + \right.$$

$$\frac{c^2\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{4\,d^3\,(c+d\,x)^2} - \frac{2\,c\left(-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}\right)}{d^2} + $$

$$\left.\frac{c^2\left(-\text{Log}\left[\frac{a}{b}+x\right]+\frac{b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}[a+b\,x]-b\,(c+d\,x)\,\text{Log}[c+d\,x])}{(b\,c-a\,d)^2}\right)}{2\,d^3\,(c+d\,x)^2} + \frac{1}{2\,d^3}\right.$$

$$\left(\frac{c\,(3\,c+4\,d\,x)}{(c+d\,x)^2}+2\,\text{Log}[c+d\,x]\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)+$$

$$\frac{\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^3}\right)+$$

$$\frac{1}{i^3}\,2\,a\,b\,B^2\,g^2\,n^2\left(-\frac{2+2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]^2}{d^2\,(c+d\,x)}+\frac{c\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]^2\right)}{4\,d^2\,(c+d\,x)^2}+\right.$$

$$2\left(\frac{1+\text{Log}\left[\frac{c}{d}+x\right]}{d^2\,(c+d\,x)}-\frac{c\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)}{4\,d^2\,(c+d\,x)^2}+\frac{-\frac{\text{Log}\left[\frac{a}{b}+x\right]}{d\,(c+d\,x)}-\frac{b\,\text{Log}[a+b\,x]}{d\,(-b\,c+a\,d)}+\frac{b\,\text{Log}[c+d\,x]}{d\,(-b\,c+a\,d)}}{d}-\frac{1}{2\,d^2\,(c+d\,x)^2}\right)$$

$$c\left(-\text{Log}\left[\frac{a}{b}+x\right]+\frac{1}{(b\,c-a\,d)^2}b\,(c+d\,x)\,(b\,c-a\,d+b\,(c+d\,x)\,\text{Log}[a+b\,x]-\right.$$

$$\left.\left.b\,(c+d\,x)\,\text{Log}[c+d\,x])\right)\right)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)-$$

$$\frac{(c+2\,d\,x)\left(-\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a}{c+d\,x}+\frac{b\,x}{c+d\,x}\right]\right)^2}{2\,d^2\,(c+d\,x)^2}+\left(-d\,(a+b\,x)\,\text{Log}\left[\frac{a}{b}+x\right]^2+\right.$$

$$\left.2\,b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,b\,(c+d\,x)\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\Big/$$

$$\left(d^2\,(-b\,c+a\,d)\,(c+d\,x)\right)+\left(c\left(d\,(a+b\,x)\,(a\,d-b\,(2\,c+d\,x))\,\text{Log}\left[\frac{a}{b}+x\right]^2-\right.\right.$$

$$2\,b^2\,(c+d\,x)^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+2\,b\,(c+d\,x)\,\text{Log}\left[\frac{a}{b}+x\right]$$

$$\left.\left(d\,(a+b\,x)+b\,(c+d\,x)\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)+2\,b^2\,(c+d\,x)^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)\right)\Big/$$

$$\left(2\,d^2\,(b\,c-a\,d)^2\,(c+d\,x)^2\right)-2\left(\left(2\,(b\,c-a\,d)\,\text{Log}\left[\frac{a}{b}+x\right]\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right)+b\,(c+d\,x)\right.\right.$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^2-2\,\text{Log}[a+b\,x]-2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+2\,\text{Log}[c+d\,x]\right)-$$

$$2\,b\,(c+d\,x)\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\Big/\left(2\,d^2\,(-b\,c+a\,d)\,(c+d\,x)\right)+$$

$$\left(c\left(-b\,(b\,c-a\,d)\,(c+d\,x)+(b\,c-a\,d)^2\,\text{Log}\left[\frac{a}{b}+x\right]\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right)-b^2\,(c+d\,x)^2\right.\right.$$

$$\text{Log}[a+b\,x]+b^2\,(c+d\,x)^2\,\text{Log}[c+d\,x]+b\,(c+d\,x)\left(b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2-\right.$$

$$2\,(b\,c - a\,d)\,\left(1 + \text{Log}\left[\frac{c}{d} + x\right]\right) - 2\,b\,(c + d\,x)\,\left(\text{Log}\left[\frac{c}{d} + x\right]\,\text{Log}\left[\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] + \right.$$

$$\left.\left.\left.\left.\text{PolyLog}\left[2,\,\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right)\right)\right)\right) \Big/ \left(4\,d^2\,(b\,c - a\,d)^2\,(c + d\,x)^2\right)\right) +$$

$$\frac{1}{i^3}\,b^2\,B^2\,g^2\,n^2\,\left(\frac{\text{Log}\left[\frac{c}{d} + x\right]^3}{3\,d^3} + \frac{2\,c\,\left(2 + 2\,\text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{c}{d} + x\right]^2\right)}{d^3\,(c + d\,x)} - \right.$$

$$\frac{c^2\,\left(1 + 2\,\text{Log}\left[\frac{c}{d} + x\right] + 2\,\text{Log}\left[\frac{c}{d} + x\right]^2\right)}{4\,d^3\,(c + d\,x)^2} + \frac{1}{2\,d^3}$$

$$\left(\frac{c\,(3\,c + 4\,d\,x)}{(c + d\,x)^2} + 2\,\text{Log}[c + d\,x]\right)\,\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c + d\,x} + \frac{b\,x}{c + d\,x}\right]\right)^2 -$$

$$\left(2\,c\,\left(-d\,(a + b\,x)\,\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\,b\,(c + d\,x)\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + \right.\right.$$

$$\left.\left.2\,b\,(c + d\,x)\,\text{PolyLog}\left[2,\,\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right)\right) \Big/ \left(d^3\,(-b\,c + a\,d)\,(c + d\,x)\right) -$$

$$\left(c^2\,\left(d\,(a + b\,x)\,(a\,d - b\,(2\,c + d\,x))\,\text{Log}\left[\frac{a}{b} + x\right]^2 - 2\,b^2\,(c + d\,x)^2\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + \right.\right.$$

$$2\,b\,(c + d\,x)\,\text{Log}\left[\frac{a}{b} + x\right]\,\left(d\,(a + b\,x) + b\,(c + d\,x)\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right]\right) +$$

$$\left.\left.2\,b^2\,(c + d\,x)^2\,\text{PolyLog}\left[2,\,\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]\right)\right) \Big/$$

$$\left(2\,d^3\,(b\,c - a\,d)^2\,(c + d\,x)^2\right) + 2\,\left(-\text{Log}\left[\frac{a}{b} + x\right] + \text{Log}\left[\frac{c}{d} + x\right] + \text{Log}\left[\frac{a}{c + d\,x} + \frac{b\,x}{c + d\,x}\right]\right)$$

$$\left(-\frac{\text{Log}\left[\frac{c}{d} + x\right]^2}{2\,d^3} - \frac{2\,c\,\left(1 + \text{Log}\left[\frac{c}{d} + x\right]\right)}{d^3\,(c + d\,x)} + \frac{c^2\,\left(1 + 2\,\text{Log}\left[\frac{c}{d} + x\right]\right)}{4\,d^3\,(c + d\,x)^2} - \right.$$

$$\frac{2\,c\,\left(-\frac{\text{Log}\left[\frac{a}{b} + x\right]}{d\,(c + d\,x)} - \frac{b\,\text{Log}[a + b\,x]}{d\,(-b\,c + a\,d)} + \frac{b\,\text{Log}[c + d\,x]}{d\,(-b\,c + a\,d)}\right)}{d^2} + \frac{1}{2\,d^3\,(c + d\,x)^2}\,c^2\,\left(-\text{Log}\left[\frac{a}{b} + x\right] + \frac{1}{(b\,c - a\,d)^2}\right.$$

$$\left.b\,(c + d\,x)\,\left(b\,c - a\,d + b\,(c + d\,x)\,\text{Log}[a + b\,x] - b\,(c + d\,x)\,\text{Log}[c + d\,x]\right)\right) +$$

$$\frac{\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + \text{PolyLog}\left[2,\,\frac{d\,(a + b\,x)}{-b\,c + a\,d}\right]}{d^3} + \frac{1}{d^3}\,\left(\text{Log}\left[\frac{a}{b} + x\right]^2\,\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] + \right.$$

$$2 \, \text{Log}\left[\frac{a}{b} + x\right] \text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 2\,\text{PolyLog}\left[3, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) -$$

$$2 \left(-\left(\left(c\left(2\,(b\,c-a\,d)\,\text{Log}\left[\frac{a}{b}+x\right]\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right) + b\,(c+d\,x)\right.\right.\right.\right.$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]^2 - 2\,\text{Log}[a+b\,x] - 2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 2\,\text{Log}[c+d\,x]\right) - 2$$

$$\left.b\,(c+d\,x)\,\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right) \Big/ \left(d^3\,(-b\,c+a\,d)\,(c+d\,x)\right)\Big) -$$

$$\left(c^2\left(-b\,(b\,c-a\,d)\,(c+d\,x) + (b\,c-a\,d)^2\,\text{Log}\left[\frac{a}{b}+x\right]\left(1+2\,\text{Log}\left[\frac{c}{d}+x\right]\right) -\right.$$

$$b^2\,(c+d\,x)^2\,\text{Log}[a+b\,x] + b^2\,(c+d\,x)^2\,\text{Log}[c+d\,x] +$$

$$b\,(c+d\,x)\left(b\,(c+d\,x)\,\text{Log}\left[\frac{c}{d}+x\right]^2 - 2\,(b\,c-a\,d)\left(1+\text{Log}\left[\frac{c}{d}+x\right]\right) -\right.$$

$$\left.\left.2\,b\,(c+d\,x)\left(\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + \text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)\Big) \Big/$$

$$\left(4\,d^3\,(b\,c-a\,d)^2\,(c+d\,x)^2\right) + \frac{1}{2\,d^3}\left(\text{Log}\left[\frac{c}{d}+x\right]^2\left(\text{Log}\left[\frac{a}{b}+x\right] - \text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right) -\right.$$

$$\left.\left.2\,\text{Log}\left[\frac{c}{d}+x\right]\text{PolyLog}\left[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right] + 2\,\text{PolyLog}\left[3, \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)$$

Problem 204: Result more than twice size of optimal antiderivative.

$$\int \frac{(a\,g + b\,g\,x)\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(c\,i + d\,i\,x)^3}\, \mathbb{d}x$$

Optimal (type 3, 151 leaves, 3 steps):

$$\frac{B^2\,g\,n^2\,(a+b\,x)^2}{4\,(b\,c-a\,d)\,i^3\,(c+d\,x)^2} -$$

$$\frac{B\,g\,n\,(a+b\,x)^2\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)\,i^3\,(c+d\,x)^2} + \frac{g\,(a+b\,x)^2\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)\,i^3\,(c+d\,x)^2}$$

Result (type 3, 582 leaves):

$$\frac{1}{4\,d^2\,(b\,c - a\,d)\,i^3\,(c + d\,x)^2}\,g\,\Bigg(2\,B^2\,d^2\,n^2\,(a + b\,x)^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 -$$

$$2\,b^2\,B\,n\,(c + d\,x)^2\,\text{Log}\,[a + b\,x]\,\Big(-2\,A + B\,n - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big) +$$

$$2\,B\,(b\,c - a\,d)\,n\,(a\,d + b\,(c + 2\,d\,x))\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]$$

$$\Big(-2\,A + B\,n - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big) +$$

$$(b\,c - a\,d)^2\,\Big(2\,A^2 - 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]^2 + 2\,B\,n\,(-2\,A + B\,n)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] +$$

$$2\,B^2\,n^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\,\Big(-2\,A + B\,n + 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\Big) - 2\,b\,(b\,c - a\,d)$$

$$(c + d\,x)\,\Big(2\,A^2 - 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]^2 + 2\,B\,n\,(-2\,A + B\,n)\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big] +$$

$$2\,B^2\,n^2\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]^2 - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big]\,\Big(-2\,A + B\,n + 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\Big) +$$

$$2\,b^2\,B\,n\,(c + d\,x)^2\,\Big(-2\,A + B\,n - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a + b\,x}{c + d\,x}\Big)^n\Big] + 2\,B\,n\,\text{Log}\Big[\frac{a + b\,x}{c + d\,x}\Big]\Big)\,\text{Log}\,[c + d\,x]\Bigg)$$

Problem 206: Result more than twice size of optimal antiderivative.

$$\int \frac{\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{(a\,g + b\,g\,x)\,(c\,i + d\,i\,x)^3}\,dx$$

Optimal (type 3, 402 leaves, 15 steps):

$$\frac{B^2\,d^2\,n^2\,(a + b\,x)^2}{4\,(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)^2} + \frac{4\,A\,b\,B\,d\,n\,(a + b\,x)}{(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)} -$$

$$\frac{4\,b\,B^2\,d\,n^2\,(a + b\,x)}{(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)} + \frac{4\,b\,B^2\,d\,n\,(a + b\,x)\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]}{(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)} -$$

$$\frac{B\,d^2\,n\,(a + b\,x)^2\,\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)}{2\,(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)^2} + \frac{d^2\,(a + b\,x)^2\,\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{2\,(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)^2} -$$

$$\frac{2\,b\,d\,(a + b\,x)\,\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^2}{(b\,c - a\,d)^3\,g\,i^3\,(c + d\,x)} + \frac{b^2\,\Big(A + B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\Big)^3}{3\,B\,(b\,c - a\,d)^3\,g\,i^3\,n}$$

Result (type 3, 971 leaves):

$$\frac{1}{12 \left(b c - a d\right)^3 g \, i^3} \left(4 b^2 B^2 n^2 \, \text{Log}\left[\frac{a+b x}{c+d x}\right]^3 - \frac{1}{\left(c+d x\right)^2} 6 B n \, \text{Log}\left[\frac{a+b x}{c+d x}\right]^2 \right.$$

$$\left(-2 A b^2 c^2 + 4 a b B c d n - a^2 B d^2 n - 4 A b^2 c d x + 4 b^2 B c d n x + 2 a b B d^2 n x - 2 A b^2 d^2 x^2 + \right.$$

$$\left. 3 b^2 B d^2 n x^2 - 2 b^2 B \left(c+d x\right)^2 \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 2 b^2 B n \left(c+d x\right)^2 \text{Log}\left[\frac{a+b x}{c+d x}\right] \right) - \frac{1}{\left(c+d x\right)^2}$$

$$6 B \left(b c - a d\right) n \, \text{Log}\left[\frac{a+b x}{c+d x}\right] \left(-6 A b c + 2 a A d + 7 b B c n - a B d n - 4 A b d x + 6 b B d n x + 2 B \right.$$

$$\left. \left(-3 b c + a d - 2 b d x\right) \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 2 B n \left(3 b c - a d + 2 b d x\right) \text{Log}\left[\frac{a+b x}{c+d x}\right] \right) + \frac{1}{\left(c+d x\right)^2}$$

$$3 \left(b c - a d\right)^2 \left(2 A^2 - 2 A B n + B^2 n^2 + 2 B^2 \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 2 B n \left(-2 A + B n\right) \text{Log}\left[\frac{a+b x}{c+d x}\right] + \right.$$

$$\left. 2 B^2 n^2 \, \text{Log}\left[\frac{a+b x}{c+d x}\right]^2 - 2 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \left(-2 A + B n + 2 B n \, \text{Log}\left[\frac{a+b x}{c+d x}\right]\right) \right) + \frac{1}{c+d x}$$

$$6 b \left(b c - a d\right) \left(2 A^2 - 6 A B n + 7 B^2 n^2 + 2 B^2 \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 2 B n \left(-2 A + 3 B n\right) \text{Log}\left[\frac{a+b x}{c+d x}\right] + \right.$$

$$\left. 2 B^2 n^2 \, \text{Log}\left[\frac{a+b x}{c+d x}\right]^2 - 2 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \left(-2 A + 3 B n + 2 B n \, \text{Log}\left[\frac{a+b x}{c+d x}\right]\right) \right) +$$

$$6 b^2 \, \text{Log}\left[a+b x\right] \left(2 A^2 - 6 A B n + 7 B^2 n^2 + 2 B^2 \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 2 B n \left(-2 A + 3 B n\right) \text{Log}\left[\frac{a+b x}{c+d x}\right] + \right.$$

$$\left. 2 B^2 n^2 \, \text{Log}\left[\frac{a+b x}{c+d x}\right]^2 - 2 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \left(-2 A + 3 B n + 2 B n \, \text{Log}\left[\frac{a+b x}{c+d x}\right]\right) \right) -$$

$$6 b^2 \left(2 A^2 - 6 A B n + 7 B^2 n^2 + 2 B^2 \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + 2 B n \left(-2 A + 3 B n\right) \text{Log}\left[\frac{a+b x}{c+d x}\right] + \right.$$

$$\left.\left. 2 B^2 n^2 \, \text{Log}\left[\frac{a+b x}{c+d x}\right]^2 - 2 B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] \left(-2 A + 3 B n + 2 B n \, \text{Log}\left[\frac{a+b x}{c+d x}\right]\right) \right) \text{Log}\left[c+d x\right] \right)$$

Problem 207: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{\left(a g + b g x\right)^2 \left(c i + d i x\right)^3} \, dx$$

Optimal (type 3, 562 leaves, 12 steps):

$$-\frac{B^2 d^3 n^2 (a+b x)^2}{4 (b c-a d)^4 g^2 i^3 (c+d x)^2} - \frac{6 A b B d^2 n (a+b x)}{(b c-a d)^4 g^2 i^3 (c+d x)} +$$

$$\frac{6 b B^2 d^2 n^2 (a+b x)}{(b c-a d)^4 g^2 i^3 (c+d x)} - \frac{2 b^3 B^2 n^2 (c+d x)}{(b c-a d)^4 g^2 i^3 (a+b x)} - \frac{6 b B^2 d^2 n (a+b x) \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]}{(b c-a d)^4 g^2 i^3 (c+d x)} +$$

$$\frac{B d^3 n (a+b x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{2 (b c-a d)^4 g^2 i^3 (c+d x)^2} - \frac{2 b^3 B n (c+d x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)}{(b c-a d)^4 g^2 i^3 (a+b x)} -$$

$$\frac{d^3 (a+b x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{2 (b c-a d)^4 g^2 i^3 (c+d x)^2} + \frac{3 b d^2 (a+b x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{(b c-a d)^4 g^2 i^3 (c+d x)} -$$

$$\frac{b^3 (c+d x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^2}{(b c-a d)^4 g^2 i^3 (a+b x)} - \frac{b^2 d \left(A + B \, \text{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]\right)^3}{B (b c-a d)^4 g^2 i^3 n}$$

Result (type 3, 1334 leaves) :

$$-\frac{1}{4\,(b\,c-a\,d)^4\,g^2\,i^3\,(a+b\,x)\,(c+d\,x)^2}$$

$$\left(4\,b^2\,B^2\,d\,n^2\,(a+b\,x)\,(c+d\,x)^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^3 + 2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2\right.$$

$$\left(6\,a\,A\,b^2\,c^2\,d + 2\,b^3\,B\,c^3\,n - 6\,a^2\,b\,B\,c\,d^2\,n + a^3\,B\,d^3\,n + 6\,A\,b^3\,c^2\,d\,x + 12\,a\,A\,b^2\,c\,d^2\,x + \right.$$

$$6\,b^3\,B\,c^2\,d\,n\,x - 12\,a\,b^2\,B\,c\,d^2\,n\,x - 3\,a^2\,b\,B\,d^3\,n\,x + 12\,A\,b^3\,c\,d^2\,x^2 + 6\,a\,A\,b^2\,d^3\,x^2 -$$

$$9\,a\,b^2\,B\,d^3\,n\,x^2 + 6\,A\,b^3\,d^3\,x^3 - 3\,b^3\,B\,d^3\,n\,x^3 + 6\,b^2\,B\,d\,(a+b\,x)\,(c+d\,x)^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$

$$\left.6\,b^2\,B\,d\,n\,(a+b\,x)\,(c+d\,x)^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + 4\,b^2\,(b\,c-a\,d)\,(c+d\,x)^2$$

$$\left(A^2 + 2\,A\,B\,n + 2\,B^2\,n^2 + B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 - 2\,B\,n\,(A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 + \right.$$

$$\left.2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(A+B\,n-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) + 2\,B\,(b\,c-a\,d)\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]$$

$$\left(2\,b\,d\,(a+b\,x)\,(c+d\,x)\,\left(4\,A-5\,B\,n+4\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-4\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) + \right.$$

$$d\,(b\,c-a\,d)\,(a+b\,x)\,\left(2\,A-B\,n+2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right) +$$

$$\left.4\,b^2\,(c+d\,x)^2\,\left(A+B\,n+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) + d\,(b\,c-a\,d)^2$$

$$(a+b\,x)\,\left(2\,A^2 - 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 2\,B\,n\,(-2\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + \right.$$

$$\left.2\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 - 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(-2\,A+B\,n+2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) +$$

$$6\,b^2\,d\,(a+b\,x)\,(c+d\,x)^2\,\text{Log}\left[a+b\,x\right]\,\left(2\,A^2 - 2\,A\,B\,n + 5\,B^2\,n^2 + 2\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + \right.$$

$$2\,B\,n\,(-2\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + 2\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 -$$

$$\left.2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(-2\,A+B\,n+2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) + 2\,b\,d\,(b\,c-a\,d)\,(a+b\,x)\,(c+d\,x)$$

$$\left(4\,A^2 - 10\,A\,B\,n + 11\,B^2\,n^2 + 4\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 2\,B\,n\,(-4\,A+5\,B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + \right.$$

$$\left.4\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 - 2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(-4\,A+5\,B\,n+4\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right) -$$

$$6\,b^2\,d\,(a+b\,x)\,(c+d\,x)^2\,\left(2\,A^2 - 2\,A\,B\,n + 5\,B^2\,n^2 + 2\,B^2\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + \right.$$

$$2\,B\,n\,(-2\,A+B\,n)\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right] + 2\,B^2\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2 -$$

$$\left.\left.2\,B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\,\left(-2\,A+B\,n+2\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\,\text{Log}\left[c+d\,x\right]\right)$$

Problem 208: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{\left(a\,g + b\,g\,x\right)^3 \left(c\,i + d\,i\,x\right)^3} \, dx$$

Optimal (type 3, 732 leaves, 14 steps):

$$\frac{B^2 \, d^4 \, n^2 \, (a+b\,x)^2}{4 \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)^2} + \frac{8 \, A\,b\,B\,d^3 \, n \, (a+b\,x)}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)} - \frac{8 \, b\,B^2 \, d^3 \, n^2 \, (a+b\,x)}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)} +$$

$$\frac{8 \, b^3 \, B^2 \, d\,n^2 \, (c+d\,x)}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (a+b\,x)} - \frac{b^4 \, B^2 \, n^2 \, (c+d\,x)^2}{4 \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, (a+b\,x)^2} + \frac{8 \, b\,B^2 \, d^3 \, n \, (a+b\,x) \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)} -$$

$$\frac{B \, d^4 \, n \, (a+b\,x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2 \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)^2} + \frac{8 \, b^3 \, B\,d\,n \, (c+d\,x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (a+b\,x)} -$$

$$\frac{b^4 \, B\,n \, (c+d\,x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2 \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, (a+b\,x)^2} + \frac{d^4 \, (a+b\,x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2 \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)^2} -$$

$$\frac{4 \, b\,d^3 \, (a+b\,x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (c+d\,x)} + \frac{4 \, b^3 \, d \, (c+d\,x) \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c - a\,d)^5 \, g^3 \, i^3 \, (a+b\,x)} -$$

$$\frac{b^4 \, (c+d\,x)^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2 \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, (a+b\,x)^2} + \frac{2 \, b^2 \, d^2 \left(A + B \, \text{Log}\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{B \, (b\,c - a\,d)^5 \, g^3 \, i^3 \, n}$$

Result (type 3, 1653 leaves):

$$\frac{1}{4\,(b\,c-a\,d)^5\,g^3\,i^3\,(a+b\,x)^2\,(c+d\,x)^2}$$

$$\left(8\,b^2\,B^2\,d^2\,n^2\,(a+b\,x)^2\,(c+d\,x)^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^3 + 2\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2\right.$$

$$\left(12\,a^2\,A\,b^2\,c^2\,d^2 - b^4\,B\,c^4\,n + 8\,a\,b^3\,B\,c^3\,d\,n - 8\,a^3\,b\,B\,c\,d^3\,n + a^4\,B\,d^4\,n + 24\,a\,A\,b^3\,c^2\,d^2\,x + \right.$$

$$24\,a^2\,A\,b^2\,c\,d^3\,x + 4\,b^4\,B\,c^3\,d\,n\,x + 24\,a\,b^3\,B\,c^2\,d^2\,n\,x - 24\,a^2\,b^2\,B\,c\,d^3\,n\,x - 4\,a^3\,b\,B\,d^4\,n\,x +$$

$$12\,A\,b^4\,c^2\,d^2\,x^2 + 48\,a\,A\,b^3\,c\,d^3\,x^2 + 12\,a^2\,A\,b^2\,d^4\,x^2 + 18\,b^4\,B\,c^2\,d^2\,n\,x^2 - 18\,a^2\,b^2\,B\,d^4\,n\,x^2 +$$

$$24\,A\,b^4\,c\,d^3\,x^3 + 24\,a\,A\,b^3\,d^4\,x^3 + 12\,b^4\,B\,c\,d^3\,n\,x^3 - 12\,a\,b^3\,B\,d^4\,n\,x^3 + 12\,A\,b^4\,d^4\,x^4 + 12\,b^2\,B\,d^2$$

$$(a+b\,x)^2\,(c+d\,x)^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 12\,b^2\,B\,d^2\,n\,(a+b\,x)^2\,(c+d\,x)^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) +$$

$$12\,b^2\,d^2\,(a+b\,x)^2\,(c+d\,x)^2\,\text{Log}[a+b\,x]\,\left(2\,A^2 + 5\,B^2\,n^2 + 4\,A\,B\,\left(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\right) + \right.$$

$$\left. 2\,B^2\,\left(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\right)^2\right) + 2\,b^2\,d\,(b\,c-a\,d)\,(a+b\,x)\,(c+d\,x)^2$$

$$\left(6\,A^2 + 14\,A\,B\,n + 15\,B^2\,n^2 + 6\,B^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(6\,A+7\,B\,n)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + \right.$$

$$\left. 6\,B^2\,n^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(6\,A + 7\,B\,n - 6\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\right) - b^2\,(b\,c-a\,d)^2$$

$$(c+d\,x)^2\,\left(2\,A^2 + 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 - 2\,B\,n\,(2\,A+B\,n)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + \right.$$

$$\left. 2\,B^2\,n^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(2\,A + B\,n - 2\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\right) + 2\,B\,(b\,c-a\,d)\,n$$

$$\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\,\left(2\,b\,d^2\,(a+b\,x)^2\,(c+d\,x)\,\Big(6\,A - 7\,B\,n + 6\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 6\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) + \right.$$

$$2\,b^2\,d\,(a+b\,x)\,(c+d\,x)^2\,\Big(6\,A + 7\,B\,n + 6\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 6\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) +$$

$$d^2\,(b\,c-a\,d)\,(a+b\,x)^2\,\Big(2\,A - B\,n + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 2\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big) -$$

$$\left. b^2\,(b\,c-a\,d)\,(c+d\,x)^2\,\Big(2\,A + B\,n + 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - 2\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\right) +$$

$$d^2\,(b\,c-a\,d)^2\,(a+b\,x)^2\,\left(2\,A^2 - 2\,A\,B\,n + B^2\,n^2 + 2\,B^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 + \right.$$

$$2\,B\,n\,(-2\,A+B\,n)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + 2\,B^2\,n^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 -$$

$$\left. 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(-2\,A + B\,n + 2\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\right) + 2\,b\,d^2\,(b\,c-a\,d)\,(a+b\,x)^2\,(c+d\,x)$$

$$\left(6\,A^2 - 14\,A\,B\,n + 15\,B^2\,n^2 + 6\,B^2\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]^2 + 2\,B\,n\,(-6\,A+7\,B\,n)\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big] + \right.$$

$$\left. 6\,B^2\,n^2\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]^2 - 2\,B\,\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big]\,\Big(-6\,A + 7\,B\,n + 6\,B\,n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\Big)\right) -$$

$$12\,b^2\,d^2\,(a+b\,x)^2\,(c+d\,x)^2\,\left(2\,A^2 + 5\,B^2\,n^2 + 4\,A\,B\,\left(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\right) + \right.$$

$$\left. 2\,B^2\,\left(\text{Log}\Big[e\,\Big(\frac{a+b\,x}{c+d\,x}\Big)^n\Big] - n\,\text{Log}\Big[\frac{a+b\,x}{c+d\,x}\Big]\right)^2\right)\,\text{Log}[c+d\,x]\right)$$

Problem 209: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \, Log\left[e \left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(a\,g + b\,g\,x)^4 \, (c\,i + d\,i\,x)^3} \, dx$$

Optimal (type 3, 908 leaves, 16 steps):

$$-\frac{B^2 \, d^5 \, n^2 \, (a+b\,x)^2}{4\,(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)^2} - \frac{10\,A\,b\,B\,d^4\,n\,(a+b\,x)}{(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)} +$$

$$\frac{10\,b\,B^2\,d^4\,n^2\,(a+b\,x)}{(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)} - \frac{20\,b^3\,B^2\,d^2\,n^2\,(c+d\,x)}{(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)} + \frac{5\,b^4\,B^2\,d\,n^2\,(c+d\,x)^2}{4\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^2} -$$

$$\frac{2\,b^5\,B^2\,n^2\,(c+d\,x)^3}{27\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^3} - \frac{10\,b\,B^2\,d^4\,n\,(a+b\,x)\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)} +$$

$$\frac{B\,d^5\,n\,(a+b\,x)^2\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)^2} - \frac{20\,b^3\,B\,d^2\,n\,(c+d\,x)\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)} +$$

$$\frac{5\,b^4\,B\,d\,n\,(c+d\,x)^2\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^2} - \frac{2\,b^5\,B\,n\,(c+d\,x)^3\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{9\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^3} -$$

$$\frac{d^5\,(a+b\,x)^2\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)^2} + \frac{5\,b\,d^4\,(a+b\,x)\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^6\,g^4\,i^3\,(c+d\,x)} -$$

$$\frac{10\,b^3\,d^2\,(c+d\,x)\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)} + \frac{5\,b^4\,d\,(c+d\,x)^2\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{2\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^2} -$$

$$\frac{b^5\,(c+d\,x)^3\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{3\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^3} - \frac{10\,b^2\,d^3\,\left(A+B\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^3}{3\,B\,(b\,c-a\,d)^6\,g^4\,i^3\,n}$$

Result (type 3, 2138 leaves):

$$-\frac{1}{108\,(b\,c-a\,d)^6\,g^4\,i^3\,(a+b\,x)^3\,(c+d\,x)^2}$$

$$\left(360\,b^2\,B^2\,d^3\,n^2\,(a+b\,x)^3\,(c+d\,x)^2\,Log\left[\frac{a+b\,x}{c+d\,x}\right]^3 + 18\,B\,n\,Log\left[\frac{a+b\,x}{c+d\,x}\right]^2\right.$$

$$\left(60\,a^3\,A\,b^2\,c^2\,d^3 + 2\,b^5\,B\,c^5\,n - 15\,a\,b^4\,B\,c^4\,d\,n + 60\,a^2\,b^3\,B\,c^3\,d^2\,n - 30\,a^4\,b\,B\,c\,d^4\,n + \right.$$

$$3\,a^5\,B\,d^5\,n + 180\,a^2\,A\,b^3\,c^2\,d^3\,x + 120\,a^3\,A\,b^2\,c\,d^4\,x - 5\,b^5\,B\,c^4\,d\,n\,x + 60\,a\,b^4\,B\,c^3\,d^2\,n\,x +$$

$$180\,a^2\,b^3\,B\,c^2\,d^3\,n\,x - 120\,a^3\,b^2\,B\,c\,d^4\,n\,x - 15\,a^4\,b\,B\,d^5\,n\,x + 180\,a\,A\,b^4\,c^2\,d^3\,x^2 +$$

$$360\,a^2\,A\,b^3\,c\,d^4\,x^2 + 60\,a^3\,A\,b^2\,d^5\,x^2 + 20\,b^5\,B\,c^3\,d^2\,n\,x^2 + 270\,a\,b^4\,B\,c^2\,d^3\,n\,x^2 -$$

$$90\,a^3\,b^2\,B\,d^5\,n\,x^2 + 60\,A\,b^5\,c^2\,d^3\,x^3 + 360\,a\,A\,b^4\,c\,d^4\,x^3 + 180\,a^2\,A\,b^3\,d^5\,x^3 + 110\,b^5\,B\,c^2\,d^3\,n\,x^3 +$$

$$180\,a\,b^4\,B\,c\,d^4\,n\,x^3 - 90\,a^2\,b^3\,B\,d^5\,n\,x^3 + 120\,A\,b^5\,c\,d^4\,x^4 + 180\,a\,A\,b^4\,d^5\,x^4 + 100\,b^5\,B\,c\,d^4\,n\,x^4 +$$

$$\left.60\,A\,b^5\,d^5\,x^5 + 20\,b^5\,B\,d^5\,n\,x^5 + 60\,b^2\,B\,d^3\,(a+b\,x)^3\,(c+d\,x)^2\,Log\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right) -$$

$$60\, b^2\, B\, d^3\, n\, (a + b\, x)^3\, (c + d\, x)^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big) + 6\, b^2\, d^2\, (b\, c - a\, d)\, (a + b\, x)^2\, (c + d\, x)^2$$

$$\Big(108\, A^2 + 282\, A\, B\, n + 319\, B^2\, n^2 + 108\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 - 6\, B\, n\, (36\, A + 47\, B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] +$$

$$108\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 + 6\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]\, \Big(36\, A + 47\, B\, n - 36\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) -$$

$$3\, b^2\, d\, (b\, c - a\, d)^2\, (a + b\, x)\, (c + d\, x)^2\, \Big(54\, A^2 + 66\, A\, B\, n + 37\, B^2\, n^2 + 54\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 -$$

$$6\, B\, n\, (18\, A + 11\, B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] + 54\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 +$$

$$6\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]\, \Big(18\, A + 11\, B\, n - 18\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) + 4\, b^2\, (b\, c - a\, d)^3\, (c + d\, x)^2$$

$$\Big(9\, A^2 + 6\, A\, B\, n + 2\, B^2\, n^2 + 9\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 - 6\, B\, n\, (3\, A + B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] +$$

$$9\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 + 6\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]\, \Big(3\, A + B\, n - 3\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) +$$

$$60\, b^2\, d^3\, (a + b\, x)^3\, (c + d\, x)^2\, \text{Log}[a + b\, x]\, \Big(18\, A^2 + 12\, A\, B\, n + 49\, B^2\, n^2 +$$

$$18\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 - 12\, B\, n\, (3\, A + B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] + 18\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 +$$

$$12\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]\, \Big(3\, A + B\, n - 3\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) + 27\, d^3\, (b\, c - a\, d)^2\, (a + b\, x)^3$$

$$\Big(2\, A^2 - 2\, A\, B\, n + B^2\, n^2 + 2\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 + 2\, B\, n\, (-2\, A + B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] +$$

$$2\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 - 2\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]\, \Big(-2\, A + B\, n + 2\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) +$$

$$54\, b\, d^3\, (b\, c - a\, d)\, (a + b\, x)^3\, (c + d\, x)\, \Big(8\, A^2 - 18\, A\, B\, n + 19\, B^2\, n^2 + 8\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 +$$

$$2\, B\, n\, (-8\, A + 9\, B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] + 8\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 -$$

$$2\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]\, \Big(-8\, A + 9\, B\, n + 8\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) + 6\, B\, (b\, c - a\, d)\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]$$

$$\Big(18\, b\, d^3\, (a + b\, x)^3\, (c + d\, x)\, \Big(8\, A - 9\, B\, n + 8\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big] - 8\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big) +$$

$$4\, b^2\, (b\, c - a\, d)^2\, (c + d\, x)^2\, \Big(3\, A + B\, n + 3\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big] - 3\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big) +$$

$$9\, d^3\, (b\, c - a\, d)\, (a + b\, x)^3\, \Big(2\, A - B\, n + 2\, B\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big] - 2\, B\, n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big) - 3\, b^2\, d$$

$$(b\, c - a\, d)\, (a + b\, x)\, (c + d\, x)^2\, \Big(18\, A + 11\, B\, n + 18\, B\, \Big(\text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big] - n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big) +$$

$$6\, b^2\, d^2\, (a + b\, x)^2\, (c + d\, x)^2\, \Big(36\, A + 47\, B\, n + 36\, B\, \Big(\text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big] - n\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]\Big)\Big)\Big)\Big) -$$

$$60\, b^2\, d^3\, (a + b\, x)^3\, (c + d\, x)^2\, \Big(18\, A^2 + 12\, A\, B\, n + 49\, B^2\, n^2 + 18\, B^2\, \text{Log}\Big[e\,\Big(\frac{a + b\, x}{c + d\, x}\Big)^n\Big]^2 -$$

$$12\, B\, n\, (3\, A + B\, n)\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big] + 18\, B^2\, n^2\, \text{Log}\Big[\frac{a + b\, x}{c + d\, x}\Big]^2 +$$

$$12\, B\, \text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\,\left(3\,A+B\,n-3\,B\,n\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\right)\,\text{Log}\left[c+d\,x\right]\right)$$

Problem 210: Unable to integrate problem.

$$\int \left(a\,g+b\,g\,x\right)^{m}\,\left(c\,i+d\,i\,x\right)^{-2-m}\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{p}\,dx$$

Optimal (type 4, 189 leaves, 3 steps):

$$\left(e^{-\frac{A\,(1+m)}{B\,n}}\,\left(a+b\,x\right)\,\left(g\,\left(a+b\,x\right)\right)^{m}\,\left(e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right)^{-\frac{1+m}{n}}\,\left(i\,\left(c+d\,x\right)\right)^{-m}\right.$$

$$\text{Gamma}\left[1+p,\,-\frac{\left(1+m\right)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{B\,n}\right]\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{p}$$

$$\left.\left(-\frac{\left(1+m\right)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{B\,n}\right)^{-p}\right)\middle/\left(\left(b\,c-a\,d\right)\,i^{2}\,\left(1+m\right)\,\left(c+d\,x\right)\right)$$

Result (type 8, 51 leaves):

$$\int \left(a\,g+b\,g\,x\right)^{m}\,\left(c\,i+d\,i\,x\right)^{-2-m}\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{p}\,dx$$

Problem 211: Unable to integrate problem.

$$\int \left(a\,g+b\,g\,x\right)^{-2-m}\,\left(c\,i+d\,i\,x\right)^{m}\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{p}\,dx$$

Optimal (type 4, 190 leaves, 3 steps):

$$-\left(\left(e^{\frac{A\,(1+m)}{B\,n}}\,\left(a+b\,x\right)\,\left(g\,\left(a+b\,x\right)\right)^{-2-m}\,\left(e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right)^{\frac{1+m}{n}}\,\left(i\,\left(c+d\,x\right)\right)^{2+m}\right.\right.$$

$$\text{Gamma}\left[1+p,\,\frac{\left(1+m\right)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{B\,n}\right]\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{p}$$

$$\left.\left.\left(\frac{\left(1+m\right)\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)}{B\,n}\right)^{-p}\right)\middle/\left(\left(b\,c-a\,d\right)\,i^{2}\,\left(1+m\right)\,\left(c+d\,x\right)\right)\right)$$

Result (type 8, 51 leaves):

$$\int \left(a\,g+b\,g\,x\right)^{-2-m}\,\left(c\,i+d\,i\,x\right)^{m}\,\left(A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]\right)^{p}\,dx$$

Problem 215: Unable to integrate problem.

$$\int \frac{\left(a\,g+b\,g\,x\right)^{m}\,\left(c\,i+d\,i\,x\right)^{-2-m}}{A+B\,\text{Log}\left[e\,\left(\frac{a+b\,x}{c+d\,x}\right)^{n}\right]}\,dx$$

Optimal (type 4, 125 leaves, 3 steps) :

$$\left(e^{-\frac{A(1+m)}{Bn}} \, (a+bx) \, \left(g \, (a+bx) \right)^m \left(e \left(\frac{a+bx}{c+dx} \right)^n \right)^{-\frac{1+m}{n}} \left(i \, (c+dx) \right)^{-m} \right.$$

$$\left. \text{ExpIntegralEi} \left[\frac{(1+m) \, \left(A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right] \right)}{Bn} \right] \right) \Big/ \left(B \, (bc-ad) \, i^2 \, n \, (c+dx) \right)$$

Result (type 8, 51 leaves) :

$$\int \frac{(ag+bgx)^m \, (ci+dix)^{-2-m}}{A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right]} \, dx$$

Problem 216: Unable to integrate problem.

$$\int \frac{(ag+bgx)^m \, (ci+dix)^{-2-m}}{\left(A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right] \right)^2} \, dx$$

Optimal (type 4, 206 leaves, 4 steps) :

$$\left(e^{-\frac{A(1+m)}{Bn}} \, (1+m) \, (a+bx) \, \left(g \, (a+bx) \right)^m \left(e \left(\frac{a+bx}{c+dx} \right)^n \right)^{-\frac{1+m}{n}} \right.$$

$$\left. \left(i \, (c+dx) \right)^{-m} \text{ExpIntegralEi} \left[\frac{(1+m) \, \left(A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right] \right)}{Bn} \right] \right) \Big/$$

$$\left(B^2 \, (bc-ad) \, i^2 \, n^2 \, (c+dx) \right) - \frac{(a+bx) \, \left(g \, (a+bx) \right)^m \, \left(i \, (c+dx) \right)^{-m}}{B \, (bc-ad) \, i^2 \, n \, (c+dx) \, \left(A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right] \right)}$$

Result (type 8, 51 leaves) :

$$\int \frac{(ag+bgx)^m \, (ci+dix)^{-2-m}}{\left(A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right] \right)^2} \, dx$$

Problem 217: Unable to integrate problem.

$$\int \frac{(ag+bgx)^m \, (ci+dix)^{-2-m}}{\left(A + B \, \text{Log}\left[e \left(\frac{a+bx}{c+dx} \right)^n \right] \right)^3} \, dx$$

Optimal (type 4, 295 leaves, 5 steps) :

$$\left(e^{-\frac{A\,(1+m)}{B\,n}} \, (1+m)^2 \, (a+b\,x) \, \left(g\,(a+b\,x) \right)^m \, \left(e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right)^{-\frac{1+m}{n}} \, \left(i\,(c+d\,x) \right)^{-m} \right.$$

$$\left. \text{ExpIntegralEi}\left[\frac{(1+m)\,\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}{B\,n} \right] \right) \Big/ \left(2\,B^3\,(b\,c - a\,d)\,i^2\,n^3\,(c+d\,x) \right) -$$

$$\frac{(a+b\,x)\,\left(g\,(a+b\,x) \right)^m\,\left(i\,(c+d\,x) \right)^{-m}}{2\,B\,(b\,c - a\,d)\,i^2\,n\,(c+d\,x)\,\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^2} -$$

$$\frac{(1+m)\,(a+b\,x)\,\left(g\,(a+b\,x) \right)^m\,\left(i\,(c+d\,x) \right)^{-m}}{2\,B^2\,(b\,c - a\,d)\,i^2\,n^2\,(c+d\,x)\,\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}\right)$$

Result (type 8, 51 leaves):

$$\int \frac{(a\,g + b\,g\,x)^m\,(c\,i + d\,i\,x)^{-2-m}}{\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^3}\,dx$$

Problem 221: Unable to integrate problem.

$$\int \frac{(a\,g + b\,g\,x)^{-2-m}\,(c\,i + d\,i\,x)^m}{A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right]}\,dx$$

Optimal (type 4, 128 leaves, 3 steps):

$$\left(e^{\frac{A\,(1+m)}{B\,n}} \, (a+b\,x) \, \left(g\,(a+b\,x) \right)^{-2-m} \, \left(e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right)^{\frac{1+m}{n}} \, \left(i\,(c+d\,x) \right)^{2+m} \right.$$

$$\left. \text{ExpIntegralEi}\left[-\frac{(1+m)\,\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}{B\,n} \right] \right) \Big/ \left(B\,(b\,c - a\,d)\,i^2\,n\,(c+d\,x) \right)$$

Result (type 8, 51 leaves):

$$\int \frac{(a\,g + b\,g\,x)^{-2-m}\,(c\,i + d\,i\,x)^m}{A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right]}\,dx$$

Problem 222: Unable to integrate problem.

$$\int \frac{(a\,g + b\,g\,x)^{-2-m}\,(c\,i + d\,i\,x)^m}{\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^2}\,dx$$

Optimal (type 4, 214 leaves, 4 steps):

$$- \left(\left(\left(e^{\frac{A\,(1+m)}{B\,n}} \; (1+m) \; (a+b\,x) \; \left(g\,(a+b\,x) \right)^{-2-m} \left(e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right)^{\frac{1+m}{n}} (i\,(c+d\,x))^{2+m} \right. \right. \right.$$

$$\left. \mathrm{ExpIntegralEi} \left[- \frac{(1+m)\,\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}{B\,n} \right] \right) \Big/ \left(B^2 \, (b\,c - a\,d) \; i^2 \, n^2 \, (c+d\,x) \right) \right) -$$

$$\frac{(a+b\,x) \; \left(g\,(a+b\,x) \right)^{-2-m} (i\,(c+d\,x))^{2+m}}{B\,(b\,c - a\,d)\,i^2\,n\,(c+d\,x)\,\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}$$

Result (type 8, 51 leaves):

$$\int \frac{(a\,g + b\,g\,x)^{-2-m} \; (c\,i + d\,i\,x)^m}{\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^2}\,dx$$

Problem 223: Unable to integrate problem.

$$\int \frac{(a\,g + b\,g\,x)^{-2-m} \; (c\,i + d\,i\,x)^m}{\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^3}\,dx$$

Optimal (type 4, 306 leaves, 5 steps):

$$\left(e^{\frac{A\,(1+m)}{B\,n}} \; (1+m)^2 \; (a+b\,x) \; \left(g\,(a+b\,x) \right)^{-2-m} \left(e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right)^{\frac{1+m}{n}} \right.$$

$$\left. (i\,(c+d\,x))^{2+m} \; \mathrm{ExpIntegralEi} \left[- \frac{(1+m)\,\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}{B\,n} \right] \right) \Big/$$

$$\left(2\,B^3 \, (b\,c - a\,d) \, i^2 \, n^3 \, (c+d\,x) \right) - \frac{(a+b\,x) \; \left(g\,(a+b\,x) \right)^{-2-m} (i\,(c+d\,x))^{2+m}}{2\,B\,(b\,c - a\,d)\,i^2\,n\,(c+d\,x)\,\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^2} +$$

$$\frac{(1+m) \; (a+b\,x) \; \left(g\,(a+b\,x) \right)^{-2-m} (i\,(c+d\,x))^{2+m}}{2\,B^2 \, (b\,c - a\,d) \, i^2 \, n^2 \, (c+d\,x)\,\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)}$$

Result (type 8, 51 leaves):

$$\int \frac{(a\,g + b\,g\,x)^{-2-m} \; (c\,i + d\,i\,x)^m}{\left(A + B\,\mathrm{Log}\left[e \left(\frac{a+b\,x}{c+d\,x} \right)^n \right] \right)^3}\,dx$$

Problem 226: Unable to integrate problem.

$$\int (a\,g + b\,g\,x)^m \; (c\,i + d\,i\,x)^{-2-m} \left(A + B\,\mathrm{Log}\left[e\,(a+b\,x)^n \, (c+d\,x)^{-n} \right] \right)^p\,dx$$

Optimal (type 4, 193 leaves, 4 steps):

$$\left(e^{-\frac{A\,(1+m)}{B\,n}} \; (a+b\,x)\; \left(g\,(a+b\,x)\right)^m\; \left(i\,(c+d\,x)\right)^{-m}\; \left(e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right)^{-\frac{1+m}{n}} \right.$$

$$\text{Gamma}\left[1+p,\; -\frac{(1+m)\;\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)}{B\,n}\right]\; \left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^p$$

$$\left. \left(-\frac{(1+m)\;\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)}{B\,n}\right)^{-p} \right) \Big/ \left((b\,c-a\,d)\; i^2\; (1+m)\; (c+d\,x)\right)$$

Result (type 8, 52 leaves):

$$\int (a\,g+b\,g\,x)^m\; (c\,i+d\,i\,x)^{-2-m}\; \left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^p\,dx$$

Problem 227: Unable to integrate problem.

$$\int (a\,g+b\,g\,x)^{-2-m}\; (c\,i+d\,i\,x)^m\; \left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^p\,dx$$

Optimal (type 4, 194 leaves, 4 steps):

$$-\left(\left(e^{\frac{A\,(1+m)}{B\,n}} \; (a+b\,x)\; \left(g\,(a+b\,x)\right)^{-2-m}\; \left(i\,(c+d\,x)\right)^{2+m}\; \left(e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right)^{\frac{1+m}{n}} \right.\right.$$

$$\text{Gamma}\left[1+p,\; \frac{(1+m)\;\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)}{B\,n}\right]\; \left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^p$$

$$\left.\left. \left(\frac{(1+m)\;\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)}{B\,n}\right)^{-p} \right) \Big/ \left((b\,c-a\,d)\; i^2\; (1+m)\; (c+d\,x)\right) \right)$$

Result (type 8, 52 leaves):

$$\int (a\,g+b\,g\,x)^{-2-m}\; (c\,i+d\,i\,x)^m\; \left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^p\,dx$$

Problem 228: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3}{(a+b\,x)\;(c+d\,x)}\,dx$$

Optimal (type 3, 45 leaves, 4 steps):

$$\frac{\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^4}{4\,B\,(b\,c-a\,d)\,n}$$

Result (type 3, 118 leaves):

$$\frac{1}{4\,b\,c\,n-4\,a\,d\,n}\left(4\,A^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] + 6\,A^2\,B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2 + \right.$$

$$\left. 4\,A\,B^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3 + B^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^4\right)$$

Problem 240: Unable to integrate problem.

$$\int \frac{(a + b\,x)^m \,(c + d\,x)^{-2-m}}{\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]}\, dx$$

Optimal (type 4, 88 leaves, 4 steps):

$$\frac{1}{(b\,c - a\,d)\,n}\,(a + b\,x)^{1+m}\,(c + d\,x)^{-1-m}\,\left(e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right)^{-\frac{1+m}{n}}$$

$$\text{ExpIntegralEi}\left[\frac{(1 + m)\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]}{n}\right]$$

Result (type 8, 42 leaves):

$$\int \frac{(a + b\,x)^m\,(c + d\,x)^{-2-m}}{\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]}\, dx$$

Problem 249: Unable to integrate problem.

$$\int \frac{\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^4}{(f + g\,x)\,(a\,h + b\,h\,x)}\, dx$$

Optimal (type 4, 361 leaves, 8 steps):

$$-\frac{\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^4\,\text{Log}\left[1 - \frac{(b\,f - a\,g)\,(c + d\,x)}{(d\,f - c\,g)\,(a + b\,x)}\right]}{(b\,f - a\,g)\,h} +$$

$$\frac{4\,B\,n\,\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^3\,\text{PolyLog}\left[2, \frac{(b\,f - a\,g)\,(c + d\,x)}{(d\,f - c\,g)\,(a + b\,x)}\right]}{(b\,f - a\,g)\,h} + \frac{1}{(b\,f - a\,g)\,h}$$

$$12\,B^2\,n^2\,\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^2\,\text{PolyLog}\left[3, \frac{(b\,f - a\,g)\,(c + d\,x)}{(d\,f - c\,g)\,(a + b\,x)}\right] +$$

$$\frac{24\,B^3\,n^3\,\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)\,\text{PolyLog}\left[4, \frac{(b\,f - a\,g)\,(c + d\,x)}{(d\,f - c\,g)\,(a + b\,x)}\right]}{(b\,f - a\,g)\,h} +$$

$$\frac{24\,B^4\,n^4\,\text{PolyLog}\left[5, \frac{(b\,f - a\,g)\,(c + d\,x)}{(d\,f - c\,g)\,(a + b\,x)}\right]}{(b\,f - a\,g)\,h}$$

Result (type 8, 45 leaves):

$$\int \frac{\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^4}{(f + g\,x)\,(a\,h + b\,h\,x)}\, dx$$

Problem 250: Unable to integrate problem.

$$\int \frac{\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^3}{(f + g\,x)\,(a\,h + b\,h\,x)}\, dx$$

Optimal (type 4, 282 leaves, 7 steps):

$$-\frac{\left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)^3 \, \text{Log}\left[1 - \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h} +$$

$$\frac{3 \, B \, n \, \left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)^2 \, \text{PolyLog}\left[2, \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h} +$$

$$\frac{6 \, B^2 \, n^2 \, \left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right) \, \text{PolyLog}\left[3, \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h} +$$

$$\frac{6 \, B^3 \, n^3 \, \text{PolyLog}\left[4, \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h}$$

Result (type 8, 45 leaves):

$$\int \frac{\left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)^3}{(f + g \, x) \, (a \, h + b \, h \, x)} \, dx$$

Problem 251: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)^2}{(f + g \, x) \, (a \, h + b \, h \, x)} \, dx$$

Optimal (type 4, 203 leaves, 6 steps):

$$-\frac{\left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)^2 \, \text{Log}\left[1 - \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h} +$$

$$\frac{2 \, B \, n \, \left(A + B \, \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right) \, \text{PolyLog}\left[2, \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h} +$$

$$\frac{2 \, B^2 \, n^2 \, \text{PolyLog}\left[3, \frac{(b \, f - a \, g) \, (c + d \, x)}{(d \, f - c \, g) \, (a + b \, x)}\right]}{(b \, f - a \, g) \, h}$$

Result (type 4, 1415 leaves):

$$\frac{1}{3 \, (b \, f - a \, g) \, h}$$

$$\left(3 \, \text{Log}[a + b \, x] \, \left(A + B \, \left(-n \, \text{Log}[a + b \, x] + n \, \text{Log}[c + d \, x] + \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)\right)^2 - \right.$$

$$3 \, \left(A + B \, \left(-n \, \text{Log}[a + b \, x] + n \, \text{Log}[c + d \, x] + \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)\right)^2 \, \text{Log}[f + g \, x] +$$

$$3 \, B \, n \, \left(A + B \, \left(-n \, \text{Log}[a + b \, x] + n \, \text{Log}[c + d \, x] + \text{Log}\left[e \, (a + b \, x)^n \, (c + d \, x)^{-n}\right]\right)\right)$$

$$\left(\text{Log}[a + b \, x]^2 - 2 \, \left(\text{Log}[a + b \, x] \, \text{Log}\left[\frac{b \, (f + g \, x)}{b \, f - a \, g}\right] + \text{PolyLog}\left[2, \frac{g \, (a + b \, x)}{-b \, f + a \, g}\right]\right)\right) -$$

$$6 \, A \, B \, n \, \left(\text{Log}[c + d \, x] \, \left(\text{Log}\left[\frac{d \, (a + b \, x)}{-b \, c + a \, d}\right] - \text{Log}\left[\frac{d \, (f + g \, x)}{d \, f - c \, g}\right]\right) + \right.$$

$$\mathrm{PolyLog}\Big[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - \mathrm{PolyLog}\Big[2, \frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big]\Big) +$$

$$6\,B^2\,n\,\Big(n\,\mathrm{Log}\,[a+b\,x] - n\,\mathrm{Log}\,[c+d\,x] - \mathrm{Log}\,\Big[e\,(a+b\,x)^{n}\,(c+d\,x)^{-n}\Big]\Big)$$

$$\Big(\mathrm{Log}\,[c+d\,x]\,\Big(\mathrm{Log}\,\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - \mathrm{Log}\,\Big[\frac{d\,(f+g\,x)}{d\,f-c\,g}\Big]\Big) + \mathrm{PolyLog}\Big[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$

$$\mathrm{PolyLog}\Big[2, \frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big]\Big) + B^2\,n^2\,\Big(\mathrm{Log}\,[a+b\,x]^2\,\Big(\mathrm{Log}\,[a+b\,x] - 3\,\mathrm{Log}\,\Big[\frac{b\,(f+g\,x)}{b\,f-a\,g}\Big]\Big) -$$

$$6\,\mathrm{Log}\,[a+b\,x]\,\mathrm{PolyLog}\Big[2, \frac{g\,(a+b\,x)}{-b\,f+a\,g}\Big] + 6\,\mathrm{PolyLog}\Big[3, \frac{g\,(a+b\,x)}{-b\,f+a\,g}\Big]\Big) +$$

$$3\,B^2\,n^2\,\Big(\mathrm{Log}\,\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\mathrm{Log}\,[c+d\,x]^2 - \mathrm{Log}\,[c+d\,x]^2\,\mathrm{Log}\,\Big[\frac{d\,(f+g\,x)}{d\,f-c\,g}\Big] +$$

$$2\,\mathrm{Log}\,[c+d\,x]\,\mathrm{PolyLog}\Big[2, \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 2\,\mathrm{Log}\,[c+d\,x]\,\mathrm{PolyLog}\Big[2, \frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big] -$$

$$2\,\mathrm{PolyLog}\Big[3, \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 2\,\mathrm{PolyLog}\Big[3, \frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big]\Big) -$$

$$6\,B^2\,n^2\,\Big(\frac{1}{2}\,\mathrm{Log}\,[a+b\,x]^2\,\Big(\mathrm{Log}\,[c+d\,x] - \mathrm{Log}\,\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big) - \mathrm{Log}\,[a+b\,x]\,\mathrm{Log}\,[c+d\,x]$$

$$\Big(\mathrm{Log}\,\Big[\frac{b\,(f+g\,x)}{b\,f-a\,g}\Big] - \frac{1}{2}\,\mathrm{Log}\,\Big[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big]\Big)\,\Big(-2\,\mathrm{Log}\,[a+b\,x] + \mathrm{Log}\,\Big[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big]\Big)$$

$$\Big(\mathrm{Log}\,\Big[\frac{b\,(f+g\,x)}{b\,f-a\,g}\Big] - \mathrm{Log}\,\Big[\frac{d\,(f+g\,x)}{d\,f-c\,g}\Big]\Big) + \mathrm{Log}\,\Big[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big]\,\mathrm{Log}\,\Big[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]$$

$$\Big(\mathrm{Log}\,\Big[\frac{b\,(f+g\,x)}{b\,f-a\,g}\Big] - \mathrm{Log}\,\Big[\frac{d\,(f+g\,x)}{d\,f-c\,g}\Big]\Big) - \frac{1}{2}\,\mathrm{Log}\,\Big[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]^2$$

$$\Big(\mathrm{Log}\,\Big[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\Big] + \mathrm{Log}\,\Big[\frac{b\,(f+g\,x)}{b\,f-a\,g}\Big] - \mathrm{Log}\,\Big[\frac{(-b\,c+a\,d)\,(f+g\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]\Big) -$$

$$\mathrm{Log}\,[a+b\,x]\,\mathrm{PolyLog}\Big[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] - \Big(\mathrm{Log}\,[c+d\,x] - \mathrm{Log}\,\Big[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]\Big)\,\mathrm{PolyLog}\Big[$$

$$2, \frac{g\,(a+b\,x)}{-b\,f+a\,g}\Big] - \Big(\mathrm{Log}\,[a+b\,x] + \mathrm{Log}\,\Big[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]\Big)\,\mathrm{PolyLog}\Big[2, \frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big] -$$

$$\mathrm{Log}\,\Big[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]\,\Big(\mathrm{PolyLog}\Big[2, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\Big] - \mathrm{PolyLog}\Big[2, \frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]\Big) +$$

$$\mathrm{PolyLog}\Big[3, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big] + \mathrm{PolyLog}\Big[3, \frac{g\,(a+b\,x)}{-b\,f+a\,g}\Big] + \mathrm{PolyLog}\Big[3, \frac{g\,(c+d\,x)}{-d\,f+c\,g}\Big] +$$

$$\mathrm{PolyLog}\Big[3, \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\Big] - \mathrm{PolyLog}\Big[3, \frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\Big]\Big)\Big)$$

Problem 252: Result more than twice size of optimal antiderivative.

$$\int \frac{A + B \operatorname{Log}\left[e \ (a + b \ x)^n \ (c + d \ x)^{-n}\right]}{(f + g \ x) \ (a \ h + b \ h \ x)} \, dx$$

Optimal (type 4, 123 leaves, 5 steps):

$$-\frac{\left(A + B \operatorname{Log}\left[e \ (a + b \ x)^n \ (c + d \ x)^{-n}\right]\right) \operatorname{Log}\left[1 - \frac{(b \, f - a \, g) \ (c + d \, x)}{(d \, f - c \, g) \ (a + b \, x)}\right]}{(b \, f - a \, g) \, h} + \frac{B \, n \operatorname{PolyLog}\left[2, \frac{(b \, f - a \, g) \ (c + d \, x)}{(d \, f - c \, g) \ (a + b \, x)}\right]}{(b \, f - a \, g) \, h}$$

Result (type 4, 304 leaves):

$$-\frac{1}{2 \ (b \, f - a \, g) \, h} \Big(-2 \, A \operatorname{Log}[a + b \, x] + B \, n \operatorname{Log}[a + b \, x]^2 - 2 \, B \, n \operatorname{Log}[a + b \, x] \operatorname{Log}[c + d \, x] +$$

$$2 \, B \, n \operatorname{Log}\left[\frac{d \ (a + b \, x)}{-b \, c + a \, d}\right] \operatorname{Log}[c + d \, x] - 2 \, B \operatorname{Log}[a + b \, x] \operatorname{Log}\left[e \ (a + b \, x)^n \ (c + d \, x)^{-n}\right] +$$

$$2 \, A \operatorname{Log}[f + g \, x] - 2 \, B \, n \operatorname{Log}[a + b \, x] \operatorname{Log}[f + g \, x] + 2 \, B \, n \operatorname{Log}[c + d \, x] \operatorname{Log}[f + g \, x] +$$

$$2 \, B \operatorname{Log}\left[e \ (a + b \, x)^n \ (c + d \, x)^{-n}\right] \operatorname{Log}[f + g \, x] + 2 \, B \, n \operatorname{Log}[a + b \, x] \operatorname{Log}\left[\frac{b \ (f + g \, x)}{b \, f - a \, g}\right] -$$

$$2 \, B \, n \operatorname{Log}[c + d \, x] \operatorname{Log}\left[\frac{d \ (f + g \, x)}{d \, f - c \, g}\right] + 2 \, B \, n \operatorname{PolyLog}\left[2, \frac{g \ (a + b \, x)}{-b \, f + a \, g}\right] +$$

$$2 \, B \, n \operatorname{PolyLog}\left[2, \frac{b \ (c + d \, x)}{b \, c - a \, d}\right] - 2 \, B \, n \operatorname{PolyLog}\left[2, \frac{g \ (c + d \, x)}{-d \, f + c \, g}\right] \Big)$$

Problem 255: Result more than twice size of optimal antiderivative.

$$\int \frac{\operatorname{Log}\left[\frac{c + d \, x}{a + b \, x}\right]}{(a + b \, x) \ ((a - c) \, h + (b - d) \, h \, x)} \, dx$$

Optimal (type 4, 33 leaves, 2 steps):

$$-\frac{\operatorname{PolyLog}\left[2, \ 1 - \frac{c + d \, x}{a + b \, x}\right]}{(b \, c - a \, d) \, h}$$

Result (type 4, 324 leaves):

$$\frac{1}{(2 \, b \, c - 2 \, a \, d) \, h} \Big(\operatorname{Log}\left[\frac{a}{b} + x\right]^2 - 2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[a + b \, x] + 2 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[a + b \, x] -$$

$$2 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[\frac{d \ (a + b \, x)}{-b \, c + a \, d}\right] + 2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[a - c + b \, x - d \, x] -$$

$$2 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[a - c + b \, x - d \, x] - 2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{b \ (a - c + b \, x - d \, x)}{-b \, c + a \, d}\right] +$$

$$2 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[\frac{d \ (a - c + b \, x - d \, x)}{-b \, c + a \, d}\right] - 2 \operatorname{Log}[a + b \, x] \operatorname{Log}\left[\frac{c + d \, x}{a + b \, x}\right] +$$

$$2 \operatorname{Log}[a - c + b \, x - d \, x] \operatorname{Log}\left[\frac{c + d \, x}{a + b \, x}\right] - 2 \operatorname{PolyLog}\left[2, \frac{(b - d) \ (a + b \, x)}{b \, c - a \, d}\right] -$$

$$2 \operatorname{PolyLog}\left[2, \frac{b \ (c + d \, x)}{b \, c - a \, d}\right] + 2 \operatorname{PolyLog}\left[2, \frac{(b - d) \ (c + d \, x)}{b \, c - a \, d}\right] \Big)$$

Problem 256: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Log}\left[\frac{a-c\,g+(b-d\,g)\,x}{a+b\,x}\right]}{(a+b\,x)\,(c+d\,x)}\,\mathbb{d}x$$

Optimal (type 4, 27 leaves, 2 steps):

$$\frac{\text{PolyLog}\left[2, \frac{g\,(c+d\,x)}{a+b\,x}\right]}{b\,c-a\,d}$$

Result (type 4, 375 leaves):

$$\frac{1}{2\,b\,c-2\,a\,d}\left(-\text{Log}\left[\frac{a}{b}+x\right]^2 + 2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x]\,-\right.$$

$$2\,\text{Log}\left[\frac{a-c\,g}{b-d\,g}+x\right]\,\text{Log}[a+b\,x] + 2\,\text{Log}\left[\frac{a-c\,g}{b-d\,g}+x\right]\,\text{Log}\left[\frac{(b-d\,g)\,(a+b\,x)}{(b\,c-a\,d)\,g}\right]\,-$$

$$2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x] + 2\,\text{Log}\left[\frac{a-c\,g}{b-d\,g}+x\right]\,\text{Log}[c+d\,x] + 2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\,-$$

$$2\,\text{Log}\left[\frac{a-c\,g}{b-d\,g}+x\right]\,\text{Log}\left[\frac{(b-d\,g)\,(c+d\,x)}{b\,c-a\,d}\right] + 2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{a-c\,g+b\,x-d\,g\,x}{a+b\,x}\right]\,-$$

$$2\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{a-c\,g+b\,x-d\,g\,x}{a+b\,x}\right] + 2\,\text{PolyLog}\left[2, \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,+$$

$$2\,\text{PolyLog}\left[2, -\frac{b\,(a-c\,g+b\,x-d\,g\,x)}{(b\,c-a\,d)\,g}\right] - 2\,\text{PolyLog}\left[2, -\frac{d\,(-a+c\,g-b\,x+d\,g\,x)}{-b\,c+a\,d}\right]\right)$$

Problem 257: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Log}\left[1-\frac{g\,(c+d\,x)}{a+b\,x}\right]}{(a+b\,x)\,(c+d\,x)}\,\mathbb{d}x$$

Optimal (type 4, 27 leaves, 3 steps):

$$\frac{\text{PolyLog}\left[2, \frac{g\,(c+d\,x)}{a+b\,x}\right]}{b\,c-a\,d}$$

Result (type 4, 375 leaves):

$$\frac{1}{2\,b\,c - 2\,a\,d}\left(-\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}[a + b\,x] - \right.$$

$$2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}[a + b\,x] + 2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}\left[\frac{(b - d\,g)\,(a + b\,x)}{(b\,c - a\,d)\,g}\right] -$$

$$2\,\text{Log}\left[\frac{a}{b} + x\right]\text{Log}[c + d\,x] + 2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}[c + d\,x] + 2\,\text{Log}\left[\frac{a}{b} + x\right]\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] -$$

$$2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}\left[\frac{(b - d\,g)\,(c + d\,x)}{b\,c - a\,d}\right] + 2\,\text{Log}[a + b\,x]\,\text{Log}\left[\frac{a - c\,g + b\,x - d\,g\,x}{a + b\,x}\right] -$$

$$2\,\text{Log}[c + d\,x]\,\text{Log}\left[\frac{a - c\,g + b\,x - d\,g\,x}{a + b\,x}\right] + 2\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] +$$

$$\left.2\,\text{PolyLog}\left[2, -\frac{b\,(a - c\,g + b\,x - d\,g\,x)}{(b\,c - a\,d)\,g}\right] - 2\,\text{PolyLog}\left[2, -\frac{d\,(-a + c\,g - b\,x + d\,g\,x)}{-b\,c + a\,d}\right]\right)$$

Problem 258: Result more than twice size of optimal antiderivative.

$$\int \frac{\text{Log}\left[\frac{a - c\,g + b\,x - d\,g\,x}{a + b\,x}\right]}{(a + b\,x)\,(c + d\,x)}\,\mathbb{d}x$$

Optimal (type 4, 27 leaves, 3 steps):

$$\frac{\text{PolyLog}\left[2, \frac{g\,(c + d\,x)}{a + b\,x}\right]}{b\,c - a\,d}$$

Result (type 4, 375 leaves):

$$\frac{1}{2\,b\,c - 2\,a\,d}\left(-\text{Log}\left[\frac{a}{b} + x\right]^2 + 2\,\text{Log}\left[\frac{a}{b} + x\right]\,\text{Log}[a + b\,x] - \right.$$

$$2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}[a + b\,x] + 2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}\left[\frac{(b - d\,g)\,(a + b\,x)}{(b\,c - a\,d)\,g}\right] -$$

$$2\,\text{Log}\left[\frac{a}{b} + x\right]\text{Log}[c + d\,x] + 2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}[c + d\,x] + 2\,\text{Log}\left[\frac{a}{b} + x\right]\text{Log}\left[\frac{b\,(c + d\,x)}{b\,c - a\,d}\right] -$$

$$2\,\text{Log}\left[\frac{a - c\,g}{b - d\,g} + x\right]\text{Log}\left[\frac{(b - d\,g)\,(c + d\,x)}{b\,c - a\,d}\right] + 2\,\text{Log}[a + b\,x]\,\text{Log}\left[\frac{a - c\,g + b\,x - d\,g\,x}{a + b\,x}\right] -$$

$$2\,\text{Log}[c + d\,x]\,\text{Log}\left[\frac{a - c\,g + b\,x - d\,g\,x}{a + b\,x}\right] + 2\,\text{PolyLog}\left[2, \frac{d\,(a + b\,x)}{-b\,c + a\,d}\right] +$$

$$\left.2\,\text{PolyLog}\left[2, -\frac{b\,(a - c\,g + b\,x - d\,g\,x)}{(b\,c - a\,d)\,g}\right] - 2\,\text{PolyLog}\left[2, -\frac{d\,(-a + c\,g - b\,x + d\,g\,x)}{-b\,c + a\,d}\right]\right)$$

Problem 259: Unable to integrate problem.

$$\int \frac{\left(A + B\,\text{Log}\left[e\,(a + b\,x)^n\,(c + d\,x)^{-n}\right]\right)^3}{a\,f\,h + b\,g\,h\,x^2 + h\,(b\,f\,x + a\,g\,x)}\,\mathbb{d}x$$

Optimal (type 4, 282 leaves, 8 steps):

$$-\frac{\left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)^3 \operatorname{Log}\left[1 - \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h} +$$

$$\frac{3\, B\, n\, \left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)^2 \operatorname{PolyLog}\left[2, \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h} +$$

$$\frac{6\, B^2\, n^2\, \left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right) \operatorname{PolyLog}\left[3, \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h} +$$

$$\frac{6\, B^3\, n^3\, \operatorname{PolyLog}\left[4, \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h}$$

Result (type 8, 53 leaves):

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)^3}{a\, f\, h + b\, g\, h\, x^2 + h \left(b\, f\, x + a\, g\, x\right)}\, dx$$

Problem 260: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)^2}{a\, f\, h + b\, g\, h\, x^2 + h \left(b\, f\, x + a\, g\, x\right)}\, dx$$

Optimal (type 4, 203 leaves, 7 steps):

$$-\frac{\left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)^2 \operatorname{Log}\left[1 - \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h} +$$

$$\frac{2\, B\, n\, \left(A + B \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right) \operatorname{PolyLog}\left[2, \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h} +$$

$$\frac{2\, B^2\, n^2\, \operatorname{PolyLog}\left[3, \frac{(b\, f - a\, g)\ (c + d\, x)}{(d\, f - c\, g)\ (a + b\, x)}\right]}{\left(b\, f - a\, g\right) h}$$

Result (type 4, 1415 leaves):

$$\frac{1}{3 \left(b\, f - a\, g\right) h}$$

$$\Bigg(3 \operatorname{Log}[a + b\, x] \left(A + B \left(-n \operatorname{Log}[a + b\, x] + n \operatorname{Log}[c + d\, x] + \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)\right)^2 - $$

$$3 \left(A + B \left(-n \operatorname{Log}[a + b\, x] + n \operatorname{Log}[c + d\, x] + \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)\right)^2 \operatorname{Log}[f + g\, x] + $$

$$3\, B\, n \left(A + B \left(-n \operatorname{Log}[a + b\, x] + n \operatorname{Log}[c + d\, x] + \operatorname{Log}\left[e \left(a + b\, x\right)^n \left(c + d\, x\right)^{-n}\right]\right)\right)$$

$$\left(\operatorname{Log}[a + b\, x]^2 - 2 \left(\operatorname{Log}[a + b\, x] \operatorname{Log}\left[\frac{b\, (f + g\, x)}{b\, f - a\, g}\right] + \operatorname{PolyLog}\left[2, \frac{g\, (a + b\, x)}{-b\, f + a\, g}\right]\right)\right) - $$

$$6\, A\, B\, n \left(\operatorname{Log}[c + d\, x] \left(\operatorname{Log}\left[\frac{d\, (a + b\, x)}{-b\, c + a\, d}\right] - \operatorname{Log}\left[\frac{d\, (f + g\, x)}{d\, f - c\, g}\right]\right) + $$

$$\operatorname{PolyLog}\left[2, \frac{b\, (c + d\, x)}{b\, c - a\, d}\right] - \operatorname{PolyLog}\left[2, \frac{g\, (c + d\, x)}{-d\, f + c\, g}\right]\right) + $$

$$6\, B^2\, n\, \Big(n\, \text{Log}[a + b\, x] - n\, \text{Log}[c + d\, x] - \text{Log}\Big[e\, (a + b\, x)^n\, (c + d\, x)^{-n}\Big]\Big)$$

$$\Big(\text{Log}[c + d\, x]\, \Big(\text{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] - \text{Log}\Big[\frac{d\,(f + g\, x)}{d\, f - c\, g}\Big]\Big) + \text{PolyLog}\Big[2, \frac{b\,(c + d\, x)}{b\, c - a\, d}\Big] -$$

$$\text{PolyLog}\Big[2, \frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big]\Big) + B^2\, n^2\, \Big(\text{Log}[a + b\, x]^2\, \Big(\text{Log}[a + b\, x] - 3\, \text{Log}\Big[\frac{b\,(f + g\, x)}{b\, f - a\, g}\Big]\Big) -$$

$$6\, \text{Log}[a + b\, x]\, \text{PolyLog}\Big[2, \frac{g\,(a + b\, x)}{-b\, f + a\, g}\Big] + 6\, \text{PolyLog}\Big[3, \frac{g\,(a + b\, x)}{-b\, f + a\, g}\Big]\Big) +$$

$$3\, B^2\, n^2\, \Big(\text{Log}\Big[\frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big]\, \text{Log}[c + d\, x]^2 - \text{Log}[c + d\, x]^2\, \text{Log}\Big[\frac{d\,(f + g\, x)}{d\, f - c\, g}\Big] +$$

$$2\, \text{Log}[c + d\, x]\, \text{PolyLog}\Big[2, \frac{b\,(c + d\, x)}{b\, c - a\, d}\Big] - 2\, \text{Log}[c + d\, x]\, \text{PolyLog}\Big[2, \frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big] -$$

$$2\, \text{PolyLog}\Big[3, \frac{b\,(c + d\, x)}{b\, c - a\, d}\Big] + 2\, \text{PolyLog}\Big[3, \frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big]\Big) -$$

$$6\, B^2\, n^2\, \Big(\frac{1}{2}\, \text{Log}[a + b\, x]^2\, \Big(\text{Log}[c + d\, x] - \text{Log}\Big[\frac{b\,(c + d\, x)}{b\, c - a\, d}\Big]\Big) - \text{Log}[a + b\, x]\, \text{Log}[c + d\, x]$$

$$\text{Log}\Big[\frac{b\,(f + g\, x)}{b\, f - a\, g}\Big] - \frac{1}{2}\, \text{Log}\Big[\frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big]\, \Big(-2\, \text{Log}[a + b\, x] + \text{Log}\Big[\frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big]\Big)$$

$$\Big(\text{Log}\Big[\frac{b\,(f + g\, x)}{b\, f - a\, g}\Big] - \text{Log}\Big[\frac{d\,(f + g\, x)}{d\, f - c\, g}\Big]\Big) + \text{Log}\Big[\frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big]\, \text{Log}\Big[\frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]$$

$$\Big(\text{Log}\Big[\frac{b\,(f + g\, x)}{b\, f - a\, g}\Big] - \text{Log}\Big[\frac{d\,(f + g\, x)}{d\, f - c\, g}\Big]\Big) - \frac{1}{2}\, \text{Log}\Big[\frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]^2$$

$$\Big(\text{Log}\Big[\frac{-b\, c + a\, d}{d\,(a + b\, x)}\Big] + \text{Log}\Big[\frac{b\,(f + g\, x)}{b\, f - a\, g}\Big] - \text{Log}\Big[\frac{(-b\, c + a\, d)\,(f + g\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]\Big) -$$

$$\text{Log}[a + b\, x]\, \text{PolyLog}\Big[2, \frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] - \Big(\text{Log}[c + d\, x] - \text{Log}\Big[\frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]\Big)\, \text{PolyLog}\Big[$$

$$2, \frac{g\,(a + b\, x)}{-b\, f + a\, g}\Big] - \Big(\text{Log}[a + b\, x] + \text{Log}\Big[\frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]\Big)\, \text{PolyLog}\Big[2, \frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big] -$$

$$\text{Log}\Big[\frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]\, \Big(\text{PolyLog}\Big[2, \frac{b\,(c + d\, x)}{d\,(a + b\, x)}\Big] - \text{PolyLog}\Big[2, \frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]\Big) +$$

$$\text{PolyLog}\Big[3, \frac{d\,(a + b\, x)}{-b\, c + a\, d}\Big] + \text{PolyLog}\Big[3, \frac{g\,(a + b\, x)}{-b\, f + a\, g}\Big] + \text{PolyLog}\Big[3, \frac{g\,(c + d\, x)}{-d\, f + c\, g}\Big] +$$

$$\text{PolyLog}\Big[3, \frac{b\,(c + d\, x)}{d\,(a + b\, x)}\Big] - \text{PolyLog}\Big[3, \frac{(b\, f - a\, g)\,(c + d\, x)}{(d\, f - c\, g)\,(a + b\, x)}\Big]\Big)\Big)$$

Problem 261: Result more than twice size of optimal antiderivative.

$$\int \frac{A + B\, \text{Log}\Big[e\,(a + b\, x)^n\,(c + d\, x)^{-n}\Big]}{a\, f\, h + b\, g\, h\, x^2 + h\,(b\, f\, x + a\, g\, x)}\, dx$$

Optimal (type 4, 123 leaves, 6 steps):

$$-\frac{\left(A + B \operatorname{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\operatorname{Log}\left[1 - \frac{(b\,f - a\,g)\,(c+d\,x)}{(d\,f - c\,g)\,(a+b\,x)}\right]}{(b\,f - a\,g)\,h} + \frac{B\,n\,\operatorname{PolyLog}\left[2,\,\frac{(b\,f - a\,g)\,(c+d\,x)}{(d\,f - c\,g)\,(a+b\,x)}\right]}{(b\,f - a\,g)\,h}$$

Result (type 4, 303 leaves) :

$$-\frac{1}{(2\,b\,f - 2\,a\,g)\,h}\left(-2\,A\,\operatorname{Log}[a+b\,x] + B\,n\,\operatorname{Log}[a+b\,x]^2 - 2\,B\,n\,\operatorname{Log}[a+b\,x]\,\operatorname{Log}[c+d\,x] + \right.$$

$$2\,B\,n\,\operatorname{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\operatorname{Log}[c+d\,x] - 2\,B\,\operatorname{Log}[a+b\,x]\,\operatorname{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] +$$

$$2\,A\,\operatorname{Log}[f+g\,x] - 2\,B\,n\,\operatorname{Log}[a+b\,x]\,\operatorname{Log}[f+g\,x] + 2\,B\,n\,\operatorname{Log}[c+d\,x]\,\operatorname{Log}[f+g\,x] +$$

$$2\,B\,\operatorname{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\operatorname{Log}[f+g\,x] + 2\,B\,n\,\operatorname{Log}[a+b\,x]\,\operatorname{Log}\left[\frac{b\,(f+g\,x)}{b\,f - a\,g}\right] -$$

$$2\,B\,n\,\operatorname{Log}[c+d\,x]\,\operatorname{Log}\left[\frac{d\,(f+g\,x)}{d\,f - c\,g}\right] + 2\,B\,n\,\operatorname{PolyLog}\left[2,\,\frac{g\,(a+b\,x)}{-b\,f + a\,g}\right] +$$

$$\left.2\,B\,n\,\operatorname{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c - a\,d}\right] - 2\,B\,n\,\operatorname{PolyLog}\left[2,\,\frac{g\,(c+d\,x)}{-d\,f + c\,g}\right]\right)$$

Summary of Integration Test Results

263 integration problems
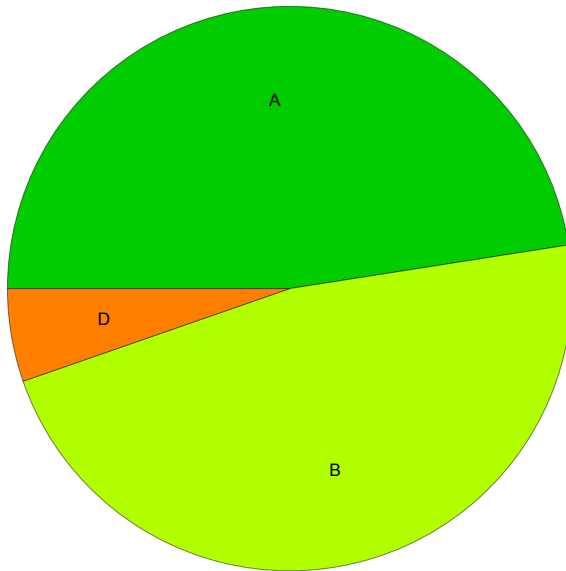
A - 125 optimal antiderivatives

B - 124 more than twice size of optimal antiderivatives

C - 0 unnecessarily complex antiderivatives

D - 14 unable to integrate problems

E - 0 integration timeouts