Mathematica 11.3 Integration Test Results

Test results for the 314 problems in "3.2.1 (f+g x)^m (A+B log(e ((a+b x) over (c+d x))^n))^p.m"

Problem 10: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 396 leaves, 8 steps):

$$-\frac{B\,(b\,c-a\,d)\,g^4\,n\,(a+b\,x)^4\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{10\,b\,d} + \frac{g^4\,(a+b\,x)^5\left(A + B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{5\,b} +$$
$$\frac{B\,(b\,c-a\,d)^2\,g^4\,n\,(a+b\,x)^3\left(4\,A + B\,n + 4\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{30\,b\,d^2} -$$
$$\frac{B\,(b\,c-a\,d)^3\,g^4\,n\,(a+b\,x)^2\left(12\,A + 7\,B\,n + 12\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{60\,b\,d^3} +$$
$$\frac{B\,(b\,c-a\,d)^4\,g^4\,n\,(a+b\,x)\left(12\,A + 13\,B\,n + 12\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{30\,b\,d^4} +$$
$$\frac{B\,(b\,c-a\,d)^5\,g^4\,n\left(12\,A + 25\,B\,n + 12\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{30\,b\,d^5} +$$
$$\frac{2\,B^2\,(b\,c-a\,d)^5\,g^4\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}$$

Result (type 4, 3194 leaves):

$$g^4\left(-\frac{8\,a^5\,B^2\,n^2}{5\,b} + \frac{2\,b^4\,B^2\,c^5\,n^2}{5\,d^5} - \frac{12\,a\,b^3\,B^2\,c^4\,n^2}{5\,d^4} + \frac{6\,a^2\,b^2\,B^2\,c^3\,n^2}{d^3} - \frac{8\,a^3\,b\,B^2\,c^2\,n^2}{d^2} + \frac{28\,a^4\,B^2\,c\,n^2}{5\,d} +\right.$$
$$a^4\,A^2\,x + \frac{8}{5}\,a^4\,A\,B\,n\,x + \frac{2\,A\,b^4\,B\,c^4\,n\,x}{5\,d^4} - \frac{2\,a\,A\,b^3\,B\,c^3\,n\,x}{d^3} + \frac{4\,a^2\,A\,b^2\,B\,c^2\,n\,x}{d^2} - \frac{4\,a^3\,A\,b\,B\,c\,n\,x}{d} +$$
$$\frac{23}{30}\,a^4\,B^2\,n^2\,x + \frac{13\,b^4\,B^2\,c^4\,n^2\,x}{30\,d^4} - \frac{59\,a\,b^3\,B^2\,c^3\,n^2\,x}{30\,d^3} + \frac{17\,a^2\,b^2\,B^2\,c^2\,n^2\,x}{5\,d^2} - \frac{79\,a^3\,b\,B^2\,c\,n^2\,x}{30\,d} +$$
$$2\,a^3\,A^2\,b\,x^2 + \frac{6}{5}\,a^3\,A\,b\,B\,n\,x^2 - \frac{A\,b^4\,B\,c^3\,n\,x^2}{5\,d^3} + \frac{a\,A\,b^3\,B\,c^2\,n\,x^2}{d^2} - \frac{2\,a^2\,A\,b^2\,B\,c\,n\,x^2}{d} +$$
$$\frac{13}{60}\,a^3\,b\,B^2\,n^2\,x^2 - \frac{7\,b^4\,B^2\,c^3\,n^2\,x^2}{60\,d^3} + \frac{9\,a\,b^3\,B^2\,c^2\,n^2\,x^2}{20\,d^2} - \frac{11\,a^2\,b^2\,B^2\,c\,n^2\,x^2}{20\,d} + 2\,a^2\,A^2\,b^2\,x^3 +$$
$$\frac{8}{15}\,a^2\,A\,b^2\,B\,n\,x^3 + \frac{2\,A\,b^4\,B\,c^2\,n\,x^3}{15\,d^2} - \frac{2\,a\,A\,b^3\,B\,c\,n\,x^3}{3\,d} + \frac{1}{30}\,a^2\,b^2\,B^2\,n^2\,x^3 + \frac{b^4\,B^2\,c^2\,n^2\,x^3}{30\,d^2} -$$

$$\frac{a\,b^3\,B^2\,c\,n^2\,x^3}{15\,d}+a\,A^2\,b^3\,x^4+\frac{1}{10}a\,A\,b^3\,B\,n\,x^4-\frac{A\,b^4\,B\,c\,n\,x^4}{10\,d}+\frac{1}{5}A^2\,b^4\,x^5+\frac{8\,a^5\,B^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]}{5\,b}+$$
$$\frac{2\,a\,b^3\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]}{5\,d^4}-\frac{2\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]}{d^3}+\frac{4\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]}{d^2}-$$
$$\frac{4\,a^4\,B^2\,c\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]}{d}+\frac{a^5\,B^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{5\,b}-\frac{2\,b^4\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]}{5\,d^5}+\frac{2\,a\,b^3\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]}{d^4}-$$
$$\frac{4\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]}{d^3}+\frac{4\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]}{d^2}-\frac{8\,a^4\,B^2\,c\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]}{5\,d}+$$
$$\frac{b^4\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{5\,d^5}-\frac{a\,b^3\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^4}+\frac{2\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3}-$$
$$\frac{2\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^2}+\frac{a^4\,B^2\,c\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d}+\frac{2\,a^5\,A\,B\,n\,\text{Log}[a+b\,x]}{5\,b}-$$
$$\frac{23\,a^5\,B^2\,n^2\,\text{Log}[a+b\,x]}{30\,b}+\frac{a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}[a+b\,x]}{5\,d^3}-\frac{13\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}[a+b\,x]}{15\,d^2}+$$
$$\frac{43\,a^4\,B^2\,c\,n^2\,\text{Log}[a+b\,x]}{30\,d}-\frac{2\,a^5\,B^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]}{5\,b}+\frac{2\,a^5\,B^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]}{5\,b}-$$
$$\frac{2\,a^5\,B^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{5\,b}+2\,a^4\,A\,B\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+\frac{8}{5}a^4\,B^2\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$\frac{2\,b^4\,B^2\,c^4\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{5\,d^4}-\frac{2\,a\,b^3\,B^2\,c^3\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^3}+\frac{4\,a^2\,b^2\,B^2\,c^2\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^2}-$$
$$\frac{4\,a^3\,b\,B^2\,c\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d}+4\,a^3\,A\,b\,B\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+\frac{6}{5}a^3\,b\,B^2\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$\frac{b^4\,B^2\,c^3\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{5\,d^3}+\frac{a\,b^3\,B^2\,c^2\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d^2}-\frac{2\,a^2\,b^2\,B^2\,c\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{d}+$$
$$4\,a^2\,A\,b^2\,B\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+\frac{8}{15}a^2\,b^2\,B^2\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$\frac{2\,b^4\,B^2\,c^2\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{15\,d^2}-\frac{2\,a\,b^3\,B^2\,c\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{3\,d}+2\,a\,A\,b^3\,B\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$\frac{1}{10}a\,b^3\,B^2\,n\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-\frac{b^4\,B^2\,c\,n\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{10\,d}+\frac{2}{5}A\,b^4\,B\,x^5\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$\frac{2\,a^5\,B^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]}{5\,b}+a^4\,B^2\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+2\,a^3\,b\,B^2\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+$$
$$2\,a^2\,b^2\,B^2\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+a\,b^3\,B^2\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+\frac{1}{5}b^4\,B^2\,x^5\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-$$
$$\frac{2\,A\,b^4\,B\,c^5\,n\,\text{Log}[c+d\,x]}{5\,d^5}+\frac{2\,a\,A\,b^3\,B\,c^4\,n\,\text{Log}[c+d\,x]}{d^4}-\frac{4\,a^2\,A\,b^2\,B\,c^3\,n\,\text{Log}[c+d\,x]}{d^3}+$$
$$\frac{4\,a^3\,A\,b\,B\,c^2\,n\,\text{Log}[c+d\,x]}{d^2}-\frac{2\,a^4\,A\,B\,c\,n\,\text{Log}[c+d\,x]}{d}-\frac{13\,b^4\,B^2\,c^5\,n^2\,\text{Log}[c+d\,x]}{30\,d^5}+$$

$$\frac{53\,a\,b^3\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x]}{30\,d^4}-\frac{38\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}[c+d\,x]}{15\,d^3}+\frac{6\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}[c+d\,x]}{5\,d^2}+$$
$$\frac{2\,b^4\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]}{5\,d^5}-\frac{2\,a\,b^3\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]}{d^4}+$$
$$\frac{4\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]}{d^3}-\frac{4\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]}{d^2}+$$
$$\frac{2\,a^4\,B^2\,c\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]}{d}-\frac{2\,b^4\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]}{5\,d^5}+$$
$$\frac{2\,a\,b^3\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]}{d^4}-\frac{4\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]}{d^3}+$$
$$\frac{4\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]}{d^2}-\frac{2\,a^4\,B^2\,c\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]}{d}-$$
$$\frac{2\,b^4\,B^2\,c^5\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]}{5\,d^5}+\frac{2\,a\,b^3\,B^2\,c^4\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]}{d^4}-$$
$$\frac{4\,a^2\,b^2\,B^2\,c^3\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]}{d^3}+\frac{4\,a^3\,b\,B^2\,c^2\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]}{d^2}-$$
$$\frac{2\,a^4\,B^2\,c\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]}{d}-\frac{2\,b^4\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{5\,d^5}+$$
$$\frac{2\,a\,b^3\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^4}-\frac{4\,a^2\,b^2\,B^2\,c^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+$$
$$\frac{4\,a^3\,b\,B^2\,c^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-\frac{2\,a^4\,B^2\,c\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}-$$
$$\frac{2\,B^2\,c\left(b^4\,c^4-5\,a\,b^3\,c^3\,d+10\,a^2\,b^2\,c^2\,d^2-10\,a^3\,b\,c\,d^3+5\,a^4\,d^4\right)n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{5\,d^5}-$$
$$\left.\frac{2\,a^5\,B^2\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{5\,b}\right)$$

Problem 11: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 335 leaves, 7 steps):

$$-\frac{B\,(b\,c-a\,d)\,g^3\,n\,(a+b\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{6\,b\,d}+\frac{g^3\,(a+b\,x)^4\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,b}+$$
$$\frac{B\,(b\,c-a\,d)^2\,g^3\,n\,(a+b\,x)^2\left(3\,A+B\,n+3\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{12\,b\,d^2}-$$
$$\frac{B\,(b\,c-a\,d)^3\,g^3\,n\,(a+b\,x)\left(6\,A+5\,B\,n+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{12\,b\,d^3}-$$
$$\frac{B\,(b\,c-a\,d)^4\,g^3\,n\left(6\,A+11\,B\,n+6\,B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{12\,b\,d^4}-$$
$$\frac{B^2\,(b\,c-a\,d)^4\,g^3\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{2\,b\,d^4}$$

Result (type 4, 2348 leaves):

$$\frac{1}{12\,b\,d^4}$$
$$g^3\left(-6\,b^4\,B^2\,c^4\,n^2+30\,a\,b^3\,B^2\,c^3\,d\,n^2-60\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2+54\,a^3\,b\,B^2\,c\,d^3\,n^2-18\,a^4\,B^2\,d^4\,n^2+12\,a^3\,A^2\,b\,d^4\right.$$
$$x-6\,A\,b^4\,B\,c^3\,d\,n\,x+24\,a\,A\,b^3\,B\,c^2\,d^2\,n\,x-36\,a^2\,A\,b^2\,B\,c\,d^3\,n\,x+18\,a^3\,A\,b\,B\,d^4\,n\,x-5\,b^4\,B^2\,c^3\,d\,n^2\,x+$$
$$17\,a\,b^3\,B^2\,c^2\,d^2\,n^2\,x-19\,a^2\,b^2\,B^2\,c\,d^3\,n^2\,x+7\,a^3\,b\,B^2\,d^4\,n^2\,x+18\,a^2\,A^2\,b^2\,d^4\,x^2+3\,A\,b^4\,B\,c^2\,d^2\,n\,x^2-$$
$$12\,a\,A\,b^3\,B\,c\,d^3\,n\,x^2+9\,a^2\,A\,b^2\,B\,d^4\,n\,x^2+b^4\,B^2\,c^2\,d^2\,n^2\,x^2-2\,a\,b^3\,B^2\,c\,d^3\,n^2\,x^2+a^2\,b^2\,B^2\,d^4\,n^2\,x^2+$$
$$12\,a\,A^2\,b^3\,d^4\,x^3-2\,A\,b^4\,B\,c\,d^3\,n\,x^3+2\,a\,A\,b^3\,B\,d^4\,n\,x^3+3\,A^2\,b^4\,d^4\,x^4-6\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$24\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]-36\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]+18\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$3\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2+6\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]+$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-18\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-3\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+$$
$$12\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2-18\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+12\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+$$
$$6\,a^4\,A\,B\,d^4\,n\,\text{Log}[a+b\,x]-3\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[a+b\,x]+10\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[a+b\,x]-$$
$$7\,a^4\,B^2\,d^4\,n^2\,\text{Log}[a+b\,x]-6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+$$
$$6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$
$$24\,a^3\,A\,b\,B\,d^4\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-6\,b^4\,B^2\,c^3\,d\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$24\,a\,b^3\,B^2\,c^2\,d^2\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-36\,a^2\,b^2\,B^2\,c\,d^3\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$18\,a^3\,b\,B^2\,d^4\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+36\,a^2\,A\,b^2\,B\,d^4\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$3\,b^4\,B^2\,c^2\,d^2\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-12\,a\,b^3\,B^2\,c\,d^3\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$9\,a^2\,b^2\,B^2\,d^4\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+24\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$

$$2\,b^4\,B^2\,c\,d^3\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+2\,a\,b^3\,B^2\,d^4\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+6\,a^4\,B^2\,d^4\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$12\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+18\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+$$
$$12\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+6\,A\,b^4\,B\,c^4\,n\,\text{Log}[c+d\,x]-$$
$$24\,a\,A\,b^3\,B\,c^3\,d\,n\,\text{Log}[c+d\,x]+36\,a^2\,A\,b^2\,B\,c^2\,d^2\,n\,\text{Log}[c+d\,x]-24\,a^3\,A\,b\,B\,c\,d^3\,n\,\text{Log}[c+d\,x]+$$
$$5\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x]-14\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x]+9\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]-$$
$$6\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+$$
$$6\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+$$
$$6\,b^4\,B^2\,c^4\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]-24\,a\,b^3\,B^2\,c^3\,d\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]+$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]-24\,a^3\,b\,B^2\,c\,d^3\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]+$$
$$6\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$6\,b\,B^2\,c\,\left(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\right)n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$6\,a^4\,B^2\,d^4\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

Problem 12: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 274 leaves, 6 steps) :

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

Result (type 4, 1589 leaves):

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

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

Problem 13: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 196 leaves, 5 steps):

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

Result (type 4, 911 leaves):

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

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

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

Optimal (type 4, 138 leaves, 4 steps):

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

Result (type 4, 537 leaves):

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

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

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

Optimal (type 3, 136 leaves, 3 steps):

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

Result (type 3, 389 leaves):

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

Problem 38: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 544 leaves, 19 steps):

$$\frac{13\,B^2\,(b\,c-a\,d)^4\,g^4\,n^2\,x}{30\,b^4} + \frac{7\,B^2\,(b\,c-a\,d)^3\,g^4\,n^2\,(c+d\,x)^2}{60\,b^3\,d} +$$
$$\frac{B^2\,(b\,c-a\,d)^2\,g^4\,n^2\,(c+d\,x)^3}{30\,b^2\,d} - \frac{2\,B\,(b\,c-a\,d)^4\,g^4\,n\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{5\,b^5} -$$
$$\frac{B\,(b\,c-a\,d)^3\,g^4\,n\,(c+d\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{5\,b^3\,d} -$$
$$\frac{2\,B\,(b\,c-a\,d)^2\,g^4\,n\,(c+d\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{15\,b^2\,d} -$$
$$\frac{B\,(b\,c-a\,d)\,g^4\,n\,(c+d\,x)^4\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{10\,b\,d} + \frac{g^4\,(c+d\,x)^5\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{5\,d} +$$
$$\frac{13\,B^2\,(b\,c-a\,d)^5\,g^4\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{30\,b^5\,d} + \frac{5\,B^2\,(b\,c-a\,d)^5\,g^4\,n^2\,\text{Log}[c+d\,x]}{6\,b^5\,d} +$$
$$\frac{2\,B\,(b\,c-a\,d)^5\,g^4\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{5\,b^5\,d} -$$
$$\frac{2\,B^2\,(b\,c-a\,d)^5\,g^4\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{5\,b^5\,d}$$

Result (type 4, 3163 leaves):

$$\frac{1}{60\,b^5\,d}\,g^4\Big(-96\,b^5\,B^2\,c^5\,n^2 + 336\,a\,b^4\,B^2\,c^4\,d\,n^2 - 480\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2 + 360\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2 - 144\,a^4\,b\,B^2\,c\,d^4\,n^2 +$$
$$24\,a^5\,B^2\,d^5\,n^2 + 60\,A^2\,b^5\,c^4\,d\,x - 96\,A\,b^5\,B\,c^4\,d\,n\,x + 240\,a\,A\,b^4\,B\,c^3\,d^2\,n\,x - 240\,a^2\,A\,b^3\,B\,c^2\,d^3\,n\,x +$$
$$120\,a^3\,A\,b^2\,B\,c\,d^4\,n\,x - 24\,a^4\,A\,b\,B\,d^5\,n\,x + 46\,b^5\,B^2\,c^4\,d\,n^2\,x - 158\,a\,b^4\,B^2\,c^3\,d^2\,n^2\,x +$$
$$204\,a^2\,b^3\,B^2\,c^2\,d^3\,n^2\,x - 118\,a^3\,b^2\,B^2\,c\,d^4\,n^2\,x + 26\,a^4\,b\,B^2\,d^5\,n^2\,x + 120\,A^2\,b^5\,c^3\,d^2\,x^2 -$$
$$72\,A\,b^5\,B\,c^3\,d^2\,n\,x^2 + 120\,a\,A\,b^4\,B\,c^2\,d^3\,n\,x^2 - 60\,a^2\,A\,b^3\,B\,c\,d^4\,n\,x^2 + 12\,a^3\,A\,b^2\,B\,d^5\,n\,x^2 +$$
$$13\,b^5\,B^2\,c^3\,d^2\,n^2\,x^2 - 33\,a\,b^4\,B^2\,c^2\,d^3\,n^2\,x^2 + 27\,a^2\,b^3\,B^2\,c\,d^4\,n^2\,x^2 - 7\,a^3\,b^2\,B^2\,d^5\,n^2\,x^2 +$$
$$120\,A^2\,b^5\,c^2\,d^3\,x^3 - 32\,A\,b^5\,B\,c^2\,d^3\,n\,x^3 + 40\,a\,A\,b^4\,B\,c\,d^4\,n\,x^3 - 8\,a^2\,A\,b^3\,B\,d^5\,n\,x^3 +$$
$$2\,b^5\,B^2\,c^2\,d^3\,n^2\,x^3 - 4\,a\,b^4\,B^2\,c\,d^4\,n^2\,x^3 + 2\,a^2\,b^3\,B^2\,d^5\,n^2\,x^3 + 60\,A^2\,b^5\,c\,d^4\,x^4 -$$
$$6\,A\,b^5\,B\,c\,d^4\,n\,x^4 + 6\,a\,A\,b^4\,B\,d^5\,n\,x^4 + 12\,A^2\,b^5\,d^5\,x^5 - 96\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] +$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] - 240\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] + 120\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] -$$
$$24\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] + 60\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 120\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 +$$
$$120\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 60\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 12\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 +$$

$$96\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-240\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]+240\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]-$$
$$120\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]+24\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]+12\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+$$
$$120\,a\,A\,b^4\,B\,c^4\,d\,n\,\text{Log}[a+b\,x]-240\,a^2\,A\,b^3\,B\,c^3\,d^2\,n\,\text{Log}[a+b\,x]+240\,a^3\,A\,b^2\,B\,c^2\,d^3\,n\,\text{Log}[a+b\,x]-$$
$$120\,a^4\,A\,b\,B\,c\,d^4\,n\,\text{Log}[a+b\,x]+24\,a^5\,A\,B\,d^5\,n\,\text{Log}[a+b\,x]+72\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}[a+b\,x]-$$
$$152\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}[a+b\,x]+106\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}[a+b\,x]-26\,a^5\,B^2\,d^5\,n^2\,\text{Log}[a+b\,x]-$$
$$120\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+240\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]-$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+120\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]-$$
$$24\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+120\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-$$
$$120\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]+24\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-$$
$$120\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+240\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+120\,a^4\,b\,B^2\,c\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$24\,a^5\,B^2\,d^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+120\,A\,b^5\,B\,c^4\,d\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$96\,b^5\,B^2\,c^4\,d\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+240\,a\,b^4\,B^2\,c^3\,d^2\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$240\,a^2\,b^3\,B^2\,c^2\,d^3\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+120\,a^3\,b^2\,B^2\,c\,d^4\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$24\,a^4\,b\,B^2\,d^5\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+240\,A\,b^5\,B\,c^3\,d^2\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$72\,b^5\,B^2\,c^3\,d^2\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+120\,a\,b^4\,B^2\,c^2\,d^3\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$60\,a^2\,b^3\,B^2\,c\,d^4\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+12\,a^3\,b^2\,B^2\,d^5\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$240\,A\,b^5\,B\,c^2\,d^3\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-32\,b^5\,B^2\,c^2\,d^3\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$40\,a\,b^4\,B^2\,c\,d^4\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-8\,a^2\,b^3\,B^2\,d^5\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$120\,A\,b^5\,B\,c\,d^4\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-6\,b^5\,B^2\,c\,d^4\,n\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$6\,a\,b^4\,B^2\,d^5\,n\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+24\,A\,b^5\,B\,d^5\,x^5\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$
$$120\,a\,b^4\,B^2\,c^4\,d\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-240\,a^2\,b^3\,B^2\,c^3\,d^2\,n\,\text{Log}[a+b\,x]$$
$$\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]-$$
$$120\,a^4\,b\,B^2\,c\,d^4\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+24\,a^5\,B^2\,d^5\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]+$$

$$60\,b^5\,B^2\,c^4\,d\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+120\,b^5\,B^2\,c^3\,d^2\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+$$
$$120\,b^5\,B^2\,c^2\,d^3\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+60\,b^5\,B^2\,c\,d^4\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2+$$
$$12\,b^5\,B^2\,d^5\,x^5\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2-24\,A\,b^5\,B\,c^5\,n\,\text{Log}[c+d\,x]-46\,b^5\,B^2\,c^5\,n^2\,\text{Log}[c+d\,x]+$$
$$86\,a\,b^4\,B^2\,c^4\,d\,n^2\,\text{Log}[c+d\,x]-52\,a^2\,b^3\,B^2\,c^3\,d^2\,n^2\,\text{Log}[c+d\,x]+$$
$$12\,a^3\,b^2\,B^2\,c^2\,d^3\,n^2\,\text{Log}[c+d\,x]+24\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-$$
$$24\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-24\,b^5\,B^2\,c^5\,n\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\text{Log}[c+d\,x]-$$
$$24\,b^5\,B^2\,c^5\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-24\,b^5\,B^2\,c^5\,n^2\,\text{PolyLog}\left[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$24\,a\,B^2\,d\left(5\,b^4\,c^4-10\,a\,b^3\,c^3\,d+10\,a^2\,b^2\,c^2\,d^2-5\,a^3\,b\,c\,d^3+a^4\,d^4\right)n^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

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

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

Optimal (type 4, 454 leaves, 15 steps):

$$\frac{5\,B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,x}{12\,b^3}+\frac{B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,(c+d\,x)^2}{12\,b^2\,d}-$$
$$\frac{B\,(b\,c-a\,d)^3\,g^3\,n\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{2\,b^4}-$$
$$\frac{B\,(b\,c-a\,d)^2\,g^3\,n\,(c+d\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{4\,b^2\,d}-$$
$$\frac{B\,(b\,c-a\,d)\,g^3\,n\,(c+d\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{6\,b\,d}+\frac{g^3\,(c+d\,x)^4\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,d}+$$
$$\frac{5\,B^2\,(b\,c-a\,d)^4\,g^3\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{12\,b^4\,d}+\frac{11\,B^2\,(b\,c-a\,d)^4\,g^3\,n^2\,\text{Log}[c+d\,x]}{12\,b^4\,d}+$$
$$\frac{B\,(b\,c-a\,d)^4\,g^3\,n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[1-\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{2\,b^4\,d}-\frac{B^2\,(b\,c-a\,d)^4\,g^3\,n^2\,\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]}{2\,b^4\,d}$$

Result (type 4, 2348 leaves):

$$\frac{1}{12\,b^4\,d}$$
$$g^3\Bigg(-18\,b^4\,B^2\,c^4\,n^2+54\,a\,b^3\,B^2\,c^3\,d\,n^2-60\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2+30\,a^3\,b\,B^2\,c\,d^3\,n^2-6\,a^4\,B^2\,d^4\,n^2+12\,A^2\,b^4\,c^3\,d$$
$$x-18\,A\,b^4\,B\,c^3\,d\,n\,x+36\,a\,A\,b^3\,B\,c^2\,d^2\,n\,x-24\,a^2\,A\,b^2\,B\,c\,d^3\,n\,x+6\,a^3\,A\,b\,B\,d^4\,n\,x+7\,b^4\,B^2\,c^3\,d\,n^2\,x-$$
$$19\,a\,b^3\,B^2\,c^2\,d^2\,n^2\,x+17\,a^2\,b^2\,B^2\,c\,d^3\,n^2\,x-5\,a^3\,b\,B^2\,d^4\,n^2\,x+18\,A^2\,b^4\,c^2\,d^2\,x^2-9\,A\,b^4\,B\,c^2\,d^2\,n\,x^2+$$
$$12\,a\,A\,b^3\,B\,c\,d^3\,n\,x^2-3\,a^2\,A\,b^2\,B\,d^4\,n\,x^2+b^4\,B^2\,c^2\,d^2\,n^2\,x^2-2\,a\,b^3\,B^2\,c\,d^3\,n^2\,x^2+a^2\,b^2\,B^2\,d^4\,n^2\,x^2+$$

$$12\,A^2\,b^4\,c\,d^3\,x^3 - 2\,A\,b^4\,B\,c\,d^3\,n\,x^3 + 2\,a\,A\,b^3\,B\,d^4\,n\,x^3 + 3\,A^2\,b^4\,d^4\,x^4 - 18\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] +$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] - 24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] + 6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right] +$$
$$12\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 - 18\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 12\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 -$$
$$3\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]^2 + 18\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] - 36\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] +$$
$$24\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] - 6\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right] + 3\,b^4\,B^2\,c^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]^2 +$$
$$24\,a\,A\,b^3\,B\,c^3\,d\,n\,\text{Log}[a+b\,x] - 36\,a^2\,A\,b^2\,B\,c^2\,d^2\,n\,\text{Log}[a+b\,x] + 24\,a^3\,A\,b\,B\,c\,d^3\,n\,\text{Log}[a+b\,x] -$$
$$6\,a^4\,A\,B\,d^4\,n\,\text{Log}[a+b\,x] + 9\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[a+b\,x] - 14\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[a+b\,x] +$$
$$5\,a^4\,B^2\,d^4\,n^2\,\text{Log}[a+b\,x] - 24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x] +$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x] - 24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x] +$$
$$6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x] + 24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x] -$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x] + 24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x] -$$
$$6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x] - 24\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$$
$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 24\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] +$$
$$6\,a^4\,B^2\,d^4\,n^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 24\,A\,b^4\,B\,c^3\,d\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$
$$18\,b^4\,B^2\,c^3\,d\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 36\,a\,b^3\,B^2\,c^2\,d^2\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] -$$
$$24\,a^2\,b^2\,B^2\,c\,d^3\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 6\,a^3\,b\,B^2\,d^4\,n\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$36\,A\,b^4\,B\,c^2\,d^2\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 9\,b^4\,B^2\,c^2\,d^2\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$12\,a\,b^3\,B^2\,c\,d^3\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 3\,a^2\,b^2\,B^2\,d^4\,n\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$24\,A\,b^4\,B\,c\,d^3\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 2\,b^4\,B^2\,c\,d^3\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$2\,a\,b^3\,B^2\,d^4\,n\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] + 6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$24\,a\,b^3\,B^2\,c^3\,d\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 36\,a^2\,b^2\,B^2\,c^2\,d^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$24\,a^3\,b\,B^2\,c\,d^3\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] - 6\,a^4\,B^2\,d^4\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right] +$$
$$12\,b^4\,B^2\,c^3\,d\,x\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 18\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 +$$
$$12\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 + 3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]^2 -$$
$$6\,A\,b^4\,B\,c^4\,n\,\text{Log}[c+d\,x] - 7\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x] + 10\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x] -$$

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

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

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

Optimal (type 4, 361 leaves, 11 steps):

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

Result (type 4, 1589 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Optimal (type 4, 220 leaves, 7 steps) :

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

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

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

Result (type 4, 941 leaves):

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

Problem 42: Result more than twice size of optimal antiderivative.

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

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

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

Result (type 4, 537 leaves):

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

Problem 43: Result more than twice size of optimal antiderivative.

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

Optimal (type 3, 163 leaves, 4 steps):

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

Result (type 3, 391 leaves):

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

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

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

Optimal (type 4, 923 leaves, 15 steps):

$$\frac{B^2\,(b\,c-a\,d)^3\,g^3\,n^2\,x}{6\,b^3\,d^3}+\frac{B^2\,(b\,c-a\,d)^2\,g^2\,(4\,b\,d\,f-3\,b\,c\,g-a\,d\,g)\,n^2\,x}{4\,b^3\,d^3}+\frac{B^2\,(b\,c-a\,d)^2\,g^3\,n^2\,(c+d\,x)^2}{12\,b^2\,d^4}-$$
$$\frac{1}{2\,b^4\,d^3}B\,(b\,c-a\,d)\,g\,\left(a^2\,d^2\,g^2-2\,a\,b\,d\,g\,(2\,d\,f-c\,g)+b^2\,\left(6\,d^2\,f^2-8\,c\,d\,f\,g+3\,c^2\,g^2\right)\right)$$
$$n\,(a+b\,x)\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)-\frac{1}{4\,b^2\,d^4}$$
$$B\,(b\,c-a\,d)\,g^2\,(4\,b\,d\,f-3\,b\,c\,g-a\,d\,g)\,n\,(c+d\,x)^2\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)-$$
$$\frac{B\,(b\,c-a\,d)\,g^3\,n\,(c+d\,x)^3\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)}{6\,b\,d^4}-\frac{(b\,f-a\,g)^4\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,b^4\,g}+$$
$$\frac{(f+g\,x)^4\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{4\,g}-\frac{1}{2\,b^4\,d^4}B\,(b\,c-a\,d)\,(2\,b\,d\,f-b\,c\,g-a\,d\,g)$$
$$\left(2\,a\,b\,d^2\,f\,g-a^2\,d^2\,g^2-b^2\,\left(2\,d^2\,f^2-2\,c\,d\,f\,g+c^2\,g^2\right)\right)n\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]+$$
$$\frac{B^2\,(b\,c-a\,d)^4\,g^3\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{6\,b^4\,d^4}+\frac{B^2\,(b\,c-a\,d)^3\,g^2\,(4\,b\,d\,f-3\,b\,c\,g-a\,d\,g)\,n^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{4\,b^4\,d^4}+$$
$$\frac{B^2\,(b\,c-a\,d)^4\,g^3\,n^2\,\text{Log}[c+d\,x]}{6\,b^4\,d^4}+\frac{B^2\,(b\,c-a\,d)^3\,g^2\,(4\,b\,d\,f-3\,b\,c\,g-a\,d\,g)\,n^2\,\text{Log}[c+d\,x]}{4\,b^4\,d^4}+\frac{1}{2\,b^4\,d^4}$$
$$B^2\,(b\,c-a\,d)^2\,g\,\left(a^2\,d^2\,g^2-2\,a\,b\,d\,g\,(2\,d\,f-c\,g)+b^2\,\left(6\,d^2\,f^2-8\,c\,d\,f\,g+3\,c^2\,g^2\right)\right)n^2\,\text{Log}[c+d\,x]-$$
$$\frac{1}{2\,b^4\,d^4}B^2\,(b\,c-a\,d)\,(2\,b\,d\,f-b\,c\,g-a\,d\,g)$$
$$\left(2\,a\,b\,d^2\,f\,g-a^2\,d^2\,g^2-b^2\,\left(2\,d^2\,f^2-2\,c\,d\,f\,g+c^2\,g^2\right)\right)n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]$$

Result (type 4, 2541 leaves) :

$$
\begin{aligned}
&f^3 x \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)^2 + \\
&\frac{3}{2} f^2 g x^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)^2 + \\
&f g^2 x^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)^2 + \\
&\frac{1}{4} g^3 x^4 \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right)^2 - \frac{1}{b d} \\
&2 B f^3 n \left(-A - B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right) \\
&\quad \left(a d \operatorname{Log}[a+b x] + b d x \operatorname{Log}\left[\frac{a+b x}{c+d x}\right] - b c \operatorname{Log}[c+d x]\right) + \\
&\frac{1}{12} B g^3 n \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right) \left(\frac{6 a^3 x}{b^3} - \frac{6 c^3 x}{d^3} - \frac{3 a^2 x^2}{b^2} + \right. \\
&\quad \left. \frac{3 c^2 x^2}{d^2} + \frac{2 a x^3}{b} - \frac{2 c x^3}{d} - \frac{6 a^4 \operatorname{Log}[a+b x]}{b^4} + 6 x^4 \operatorname{Log}\left[\frac{a+b x}{c+d x}\right] + \frac{6 c^4 \operatorname{Log}[c+d x]}{d^4}\right) + \\
&B f g^2 n \left(A + B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right) \\
&\quad \left(\frac{(b c - a d)\, x \,(2 b c + 2 a d - b d x)}{b^2 d^2} + \frac{2 a^3 \operatorname{Log}[a+b x]}{b^3} + 2 x^3 \operatorname{Log}\left[\frac{a+b x}{c+d x}\right] - \frac{2 c^3 \operatorname{Log}[c+d x]}{d^3}\right) - \\
&\frac{1}{b^2 d^2} 3 B f^2 g n \left(-A - B \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + B n \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]\right) \\
&\quad \left(-a^2 d^2 \operatorname{Log}[a+b x] + b \left(d (-b c + a d)\, x + b d^2 x^2 \operatorname{Log}\left[\frac{a+b x}{c+d x}\right] + b c^2 \operatorname{Log}[c+d x]\right)\right) + \\
&\frac{1}{b d} B^2 f^3 n^2 \left(a d \operatorname{Log}\left[\frac{a}{b} + x\right]^2 + b c \operatorname{Log}\left[\frac{c}{d} + x\right]^2 - 2 a d \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[a+b x] + \right. \\
&\quad 2 a d \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[a+b x] - 2 a d \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[\frac{d (a+b x)}{-b c + a d}\right] + \\
&\quad 2 a d \operatorname{Log}[a+b x] \operatorname{Log}\left[\frac{a+b x}{c+d x}\right] + b d x \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]^2 + 2 b c \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[c+d x] - \\
&\quad 2 b c \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[c+d x] - 2 b c \operatorname{Log}\left[\frac{a+b x}{c+d x}\right] \operatorname{Log}[c+d x] - 2 b c \operatorname{Log}\left[\frac{a}{b} + x\right] \\
&\quad \left. \operatorname{Log}\left[\frac{b (c+d x)}{b c - a d}\right] - 2 b c \operatorname{PolyLog}\left[2, \frac{d (a+b x)}{-b c + a d}\right] - 2 a d \operatorname{PolyLog}\left[2, \frac{b (c+d x)}{b c - a d}\right]\right) + \\
&\frac{1}{12} B^2 g^3 n^2 \left(3 x^4 \operatorname{Log}\left[\frac{a+b x}{c+d x}\right]^2 + \frac{1}{b^4 d^4} \left(-6 b^4 c^4 + 6 a b^3 c^3 d + 6 a^3 b c d^3 - 6 a^4 d^4 - 5 b^4 c^3 d x + \right.\right. \\
&\quad 5 a b^3 c^2 d^2 x + 5 a^2 b^2 c d^3 x - 5 a^3 b d^4 x + b^4 c^2 d^2 x^2 - 2 a b^3 c d^3 x^2 + a^2 b^2 d^4 x^2 - \\
&\quad 6 a b^3 c^3 d \operatorname{Log}\left[\frac{a}{b} + x\right] + 6 a^4 d^4 \operatorname{Log}\left[\frac{a}{b} + x\right] - 3 a^4 d^4 \operatorname{Log}\left[\frac{a}{b} + x\right]^2 + 6 b^4 c^4 \operatorname{Log}\left[\frac{c}{d} + x\right] - \\
&\quad 6 a^3 b c d^3 \operatorname{Log}\left[\frac{c}{d} + x\right] - 3 b^4 c^4 \operatorname{Log}\left[\frac{c}{d} + x\right]^2 - 3 a^2 b^2 c^2 d^2 \operatorname{Log}[a+b x] - 2 a^3 b c d^3 \operatorname{Log}[a+b x] + \\
&\quad \left. 5 a^4 d^4 \operatorname{Log}[a+b x] + 6 a^4 d^4 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[a+b x] - 6 a^4 d^4 \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[a+b x] + \right.
\end{aligned}
$$

$$6\,a^4\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-6\,b^4\,c^3\,d\,x\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+6\,a^3\,b\,d^4\,x\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+$$
$$3\,b^4\,c^2\,d^2\,x^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-3\,a^2\,b^2\,d^4\,x^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-2\,b^4\,c\,d^3\,x^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+$$
$$2\,a\,b^3\,d^4\,x^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]-6\,a^4\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]+5\,b^4\,c^4\,\text{Log}[c+d\,x]-$$
$$2\,a\,b^3\,c^3\,d\,\text{Log}[c+d\,x]-3\,a^2\,b^2\,c^2\,d^2\,\text{Log}[c+d\,x]-6\,b^4\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]+$$
$$6\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]+6\,b^4\,c^4\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\,\text{Log}[c+d\,x]+6\,b^4\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]$$
$$\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+6\,b^4\,c^4\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+6\,a^4\,d^4\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)\Bigg)+\frac{3}{2}\,B^2$$
$$f^2\,g\,n^2\left(x^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2-\frac{1}{b^2\,d^2}\left(-2\,d\,(-b\,c+a\,d)\,(a+b\,x)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)+a^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]^2-\right.\right.$$
$$2\,b\,(b\,c-a\,d)\,(c+d\,x)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)+b^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]^2-2\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\right.$$
$$\left.\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)\left(a^2\,d^2\,\text{Log}[a+b\,x]-b\,(d\,(-b\,c+a\,d)\,x+b\,c^2\,\text{Log}[c+d\,x])\right)-$$
$$2\,b^2\,c^2\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)-$$
$$\left.\left.2\,a^2\,d^2\left(\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)+$$
$$3\,B^2\,f\,g^2\,n^2\left(\frac{1}{3}\,x^3\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]^2-\frac{1}{6\,b^3\,d^3}\left(4\,d\,(-b\,c+a\,d)\,(b\,c+a\,d)\,(a+b\,x)\left(-1+\text{Log}\left[\frac{a}{b}+x\right]\right)-\right.\right.$$
$$2\,a^3\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]^2+4\,b\,(b\,c-a\,d)\,(b\,c+a\,d)\,(c+d\,x)\left(-1+\text{Log}\left[\frac{c}{d}+x\right]\right)-$$
$$2\,b^3\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2+d^2\,(b\,c-a\,d)\left(b\,x\,(2\,a-b\,x)+2\,b^2\,x^2\,\text{Log}\left[\frac{a}{b}+x\right]-2\,a^2\,\text{Log}[a+b\,x]\right)+$$
$$b^2\,(b\,c-a\,d)\left(d\,x\,(-2\,c+d\,x)-2\,d^2\,x^2\,\text{Log}\left[\frac{c}{d}+x\right]+2\,c^2\,\text{Log}[c+d\,x]\right)-$$
$$2\left(\text{Log}\left[\frac{a}{b}+x\right]-\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]\right)$$
$$(b\,d\,(b\,c-a\,d)\,x\,(-2\,b\,c-2\,a\,d+b\,d\,x)-2\,a^3\,d^3\,\text{Log}[a+b\,x]+2\,b^3\,c^3\,\text{Log}[c+d\,x])+$$
$$4\,b^3\,c^3\left(\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)+$$
$$\left.\left.4\,a^3\,d^3\left(\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)\right)$$

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

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

Optimal (type 4, 565 leaves, 12 steps):

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

Result (type 4, 1534 leaves) :

$$f^2 x \left(A + B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 + f g x^2 \left(A + B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 +$$
$$\frac{1}{3} g^2 x^3 \left(A + B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)^2 - \frac{1}{b d}$$
$$2 B f^2 n \left(-A - B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + B n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)$$
$$\left(a d \operatorname{Log}[a + b x] + b d x \operatorname{Log}\left[\frac{a + b x}{c + d x}\right] - b c \operatorname{Log}[c + d x]\right) +$$
$$\frac{1}{3} B g^2 n \left(A + B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] - B n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)$$
$$\left(\frac{(b c - a d) x (2 b c + 2 a d - b d x)}{b^2 d^2} + \frac{2 a^3 \operatorname{Log}[a + b x]}{b^3} + 2 x^3 \operatorname{Log}\left[\frac{a + b x}{c + d x}\right] - \frac{2 c^3 \operatorname{Log}[c + d x]}{d^3}\right) -$$
$$\frac{1}{b^2 d^2} 2 B f g n \left(-A - B \operatorname{Log}\left[e \left(\frac{a + b x}{c + d x}\right)^n\right] + B n \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]\right)$$
$$\left(-a^2 d^2 \operatorname{Log}[a + b x] + b \left(d (-b c + a d) x + b d^2 x^2 \operatorname{Log}\left[\frac{a + b x}{c + d x}\right] + b c^2 \operatorname{Log}[c + d x]\right)\right) +$$
$$\frac{1}{b d} B^2 f^2 n^2 \left(a d \operatorname{Log}\left[\frac{a}{b} + x\right]^2 + b c \operatorname{Log}\left[\frac{c}{d} + x\right]^2 - 2 a d \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[a + b x] +\right.$$
$$2 a d \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[a + b x] - 2 a d \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[\frac{d (a + b x)}{-b c + a d}\right] +$$
$$2 a d \operatorname{Log}[a + b x] \operatorname{Log}\left[\frac{a + b x}{c + d x}\right] + b d x \operatorname{Log}\left[\frac{a + b x}{c + d x}\right]^2 + 2 b c \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}[c + d x] -$$
$$\left.2 b c \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}[c + d x] - 2 b c \operatorname{Log}\left[\frac{a + b x}{c + d x}\right] \operatorname{Log}[c + d x] - 2 b c \operatorname{Log}\left[\frac{a}{b} + x\right]\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Optimal (type 4, 290 leaves, 9 steps):

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

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

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

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

Result (type 4, 902 leaves) :

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

Problem 70: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 135 leaves, 6 steps) :

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

Result (type 4, 421 leaves):

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

Problem 71: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 297 leaves, 9 steps):

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

Result (type 4, 1441 leaves):

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

Problem 72: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 206 leaves, 4 steps):

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

Result (type 4, 3524 leaves):

$$\frac{1}{g(-b f + a g)(-d f + c g)(f + g x)}$$
$$\Bigg(-A^2 b d f^2 + A^2 b c f g + a A^2 d f g - a A^2 c g^2 + 2 A b B d f^2 n \operatorname{Log}\left[\frac{a}{b} + x\right] -$$
$$2 A b B c f g n \operatorname{Log}\left[\frac{a}{b} + x\right] + 2 A b B d f g n x \operatorname{Log}\left[\frac{a}{b} + x\right] - 2 A b B c g^2 n x \operatorname{Log}\left[\frac{a}{b} + x\right] -$$
$$b B^2 d f^2 n^2 \operatorname{Log}\left[\frac{a}{b} + x\right]^2 + b B^2 c f g n^2 \operatorname{Log}\left[\frac{a}{b} + x\right]^2 - b B^2 d f g n^2 x \operatorname{Log}\left[\frac{a}{b} + x\right]^2 +$$
$$b B^2 c g^2 n^2 x \operatorname{Log}\left[\frac{a}{b} + x\right]^2 - 2 A b B d f^2 n \operatorname{Log}\left[\frac{c}{d} + x\right] + 2 a A B d f g n \operatorname{Log}\left[\frac{c}{d} + x\right] -$$
$$2 A b B d f g n x \operatorname{Log}\left[\frac{c}{d} + x\right] + 2 a A B d g^2 n x \operatorname{Log}\left[\frac{c}{d} + x\right] + 2 b B^2 d f^2 n^2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{c}{d} + x\right] -$$
$$2 a B^2 d f g n^2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{c}{d} + x\right] + 2 b B^2 d f g n^2 x \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{c}{d} + x\right] -$$
$$2 a B^2 d g^2 n^2 x \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{c}{d} + x\right] - b B^2 d f^2 n^2 \operatorname{Log}\left[\frac{c}{d} + x\right]^2 + a B^2 d f g n^2 \operatorname{Log}\left[\frac{c}{d} + x\right]^2 -$$
$$b B^2 d f g n^2 x \operatorname{Log}\left[\frac{c}{d} + x\right]^2 + a B^2 d g^2 n^2 x \operatorname{Log}\left[\frac{c}{d} + x\right]^2 - 2 A b B d f^2 \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$$
$$2 A b B c f g \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 2 a A B d f g \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 2 a A B c g^2 \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$$
$$2 b B^2 d f^2 n \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 2 b B^2 c f g n \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] +$$
$$2 b B^2 d f g n x \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] - 2 b B^2 c g^2 n x \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] -$$
$$2 b B^2 d f^2 n \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 2 a B^2 d f g n \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] -$$
$$2 b B^2 d f g n x \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] + 2 a B^2 d g^2 n x \operatorname{Log}\left[\frac{c}{d} + x\right] \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right] -$$
$$b B^2 d f^2 \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + b B^2 c f g \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 + a B^2 d f g \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 -$$
$$a B^2 c g^2 \operatorname{Log}\left[e \left(\frac{a+b x}{c+d x}\right)^n\right]^2 - 2 b B^2 c f g n^2 \operatorname{Log}\left[\frac{a}{b} + x\right] \operatorname{Log}\left[\frac{g(c+d x)}{-d f + c g}\right] +$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 73: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 389 leaves, 9 steps):

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

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

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

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

Result (type 4, 18311 leaves):

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

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

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

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

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

$$B^2\,n^2\,\left(2\,\left(\frac{1}{2\,g}\left(\frac{g\,\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a\,g}{b}\right)^3\,\left(1-\frac{g\,\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right)}-\left(\frac{g^2\,\left(\frac{a}{b}+x\right)^2}{\left(-f+\frac{a\,g}{b}\right)^4\,\left(1-\frac{g\,\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right)^2}+\frac{2\,g\,\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a\,g}{b}\right)^3\,\left(1-\frac{g\,\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right)}\right)\right.\right.\right.$$

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

$$\left(\frac{g^2\left(\frac{c}{d}+x\right)^2}{\left(-f+\frac{c\,g}{d}\right)^4\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right)^2}+\frac{2\,g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c\,g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right)}\right)\text{Log}\left[\frac{c}{d}+x\right]-\frac{\text{Log}\left[1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right]}{\left(-f+\frac{c\,g}{d}\right)^2}\Bigg)\Bigg)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\frac{(b f-a g)\left(-\frac{a b g\left(\frac{a}{b}+x\right)}{(b f-a g)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b f-a g}\right)\operatorname{Log}\left[1+\frac{b g\left(\frac{a}{b}+x\right)}{b f-a g}\right]}{b g^2\left(\frac{a}{b}+x\right)}\right)+$$

$$\frac{(-d f+c g)^2\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)^2\operatorname{Log}\left[1-\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]}{d^2 g^2\left(\frac{c}{d}+x\right)^2}+$$

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

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

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

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

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

$$(-d f+c g)\left(\frac{2 c^2 d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^3}-\frac{2 c d\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}\right)\operatorname{Log}\left[1-\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]-$$

$$\frac{c\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)\operatorname{Log}\left[1-\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]}{d g\left(\frac{c}{d}+x\right)}+$$

$$\left.\frac{(-d f+c g)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)\operatorname{Log}\left[1-\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]}{d g^2\left(\frac{c}{d}+x\right)}\right)+$$

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

$$\left.\operatorname{Log}\left[1+\frac{d(b f-a g)\left(\frac{c}{d}+x\right)}{b(-d f+c g)\left(\frac{a}{b}+x\right)}\right]\right)\Big/$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left.\text{PolyLog}\left[2,-\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]\right)\Big/\left(d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)\right)-\frac{1}{d\,g\,\left(\frac{c}{d}+x\right)}$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 74: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 747 leaves, 12 steps):

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

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

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

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

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

$$\left(2\,B\left(b\,c-a\,d\right)\left(a^2\,d^2\,g^2-a\,b\,d\,g\left(3\,d\,f-c\,g\right)+b^2\left(3\,d^2\,f^2-3\,c\,d\,f\,g+c^2\,g^2\right)\right) n\right.$$

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

$$\left(2\,B^2\left(b\,c-a\,d\right)\left(a^2\,d^2\,g^2-a\,b\,d\,g\left(3\,d\,f-c\,g\right)+b^2\left(3\,d^2\,f^2-3\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

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

Result (type 4, 55 186 leaves): Display of huge result suppressed!

Problem 75: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A+B\,\text{Log}\left[e\left(\frac{a+b\,x}{c+d\,x}\right)^n\right]\right)^2}{\left(f+g\,x\right)^5}\,dx$$

Optimal (type 4, 1208 leaves, 15 steps):

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

Result (type 4, 142 969 leaves): Display of huge result suppressed!

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

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

Optimal (type 4, 365 leaves, 8 steps):

$$-\frac{B\,(b\,c-a\,d)\,g^4\,(a+b\,x)^4\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{10\,b\,d}+$$
$$\frac{g^4\,(a+b\,x)^5\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{5\,b}+\frac{B\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3\left(4\,A+B+4\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b\,d^2}-$$
$$\frac{B\,(b\,c-a\,d)^3\,g^4\,(a+b\,x)^2\left(12\,A+7\,B+12\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{60\,b\,d^3}+$$
$$\frac{B\,(b\,c-a\,d)^4\,g^4\,(a+b\,x)\left(12\,A+13\,B+12\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b\,d^4}+$$
$$\frac{B\,(b\,c-a\,d)^5\,g^4\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\left(12\,A+25\,B+12\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{30\,b\,d^5}+$$
$$\frac{2\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}$$

Result (type 4, 2878 leaves):

$$g^4\left(-\frac{8\,a^5\,B^2}{5\,b}+\frac{2\,b^4\,B^2\,c^5}{5\,d^5}-\frac{12\,a\,b^3\,B^2\,c^4}{5\,d^4}+\frac{6\,a^2\,b^2\,B^2\,c^3}{d^3}-\frac{8\,a^3\,b\,B^2\,c^2}{d^2}+\frac{28\,a^4\,B^2\,c}{5\,d}+a^4\,A^2\,x+\right.$$
$$\frac{8}{5}\,a^4\,A\,B\,x+\frac{23}{30}\,a^4\,B^2\,x+\frac{2\,A\,b^4\,B\,c^4\,x}{5\,d^4}+\frac{13\,b^4\,B^2\,c^4\,x}{30\,d^4}-\frac{2\,a\,A\,b^3\,B\,c^3\,x}{d^3}-\frac{59\,a\,b^3\,B^2\,c^3\,x}{30\,d^3}+$$
$$\frac{4\,a^2\,A\,b^2\,B\,c^2\,x}{d^2}+\frac{17\,a^2\,b^2\,B^2\,c^2\,x}{5\,d^2}-\frac{4\,a^3\,A\,b\,B\,c\,x}{d}-\frac{79\,a^3\,b\,B^2\,c\,x}{30\,d}+2\,a^3\,A^2\,b\,x^2+\frac{6}{5}\,a^3\,A\,b\,B\,x^2+$$
$$\frac{13}{60}\,a^3\,b\,B^2\,x^2-\frac{A\,b^4\,B\,c^3\,x^2}{5\,d^3}-\frac{7\,b^4\,B^2\,c^3\,x^2}{60\,d^3}+\frac{a\,A\,b^3\,B\,c^2\,x^2}{d^2}+\frac{9\,a\,b^3\,B^2\,c^2\,x^2}{20\,d^2}-\frac{2\,a^2\,A\,b^2\,B\,c\,x^2}{d}-$$
$$\frac{11\,a^2\,b^2\,B^2\,c\,x^2}{20\,d}+2\,a^2\,A^2\,b^2\,x^3+\frac{8}{15}\,a^2\,A\,b^2\,B\,x^3+\frac{1}{30}\,a^2\,b^2\,B^2\,x^3+\frac{2\,A\,b^4\,B\,c^2\,x^3}{15\,d^2}+\frac{b^4\,B^2\,c^2\,x^3}{30\,d^2}-$$
$$\frac{2\,a\,A\,b^3\,B\,c\,x^3}{3\,d}-\frac{a\,b^3\,B^2\,c\,x^3}{15\,d}+a\,A^2\,b^3\,x^4+\frac{1}{10}\,a\,A\,b^3\,B\,x^4-\frac{A\,b^4\,B\,c\,x^4}{10\,d}+\frac{1}{5}\,A^2\,b^4\,x^5+$$
$$\frac{8\,a^5\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]}{5\,b}+\frac{2\,a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]}{5\,d^4}-\frac{2\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]}{d^3}+\frac{4\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]}{d^2}-$$
$$\frac{4\,a^4\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]}{d}+\frac{a^5\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{5\,b}-\frac{2\,b^4\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]}{5\,d^5}+\frac{2\,a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]}{d^4}-$$
$$\frac{4\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]}{d^3}+\frac{4\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]}{d^2}-\frac{8\,a^4\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]}{5\,d}+\frac{b^4\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]^2}{5\,d^5}-$$
$$\frac{a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^4}+\frac{2\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3}-\frac{2\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^2}+$$
$$\frac{a^4\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d}+\frac{2\,a^5\,A\,B\,\text{Log}[a+b\,x]}{5\,b}-\frac{23\,a^5\,B^2\,\text{Log}[a+b\,x]}{30\,b}+\frac{a^2\,b^2\,B^2\,c^3\,\text{Log}[a+b\,x]}{5\,d^3}-$$
$$\frac{13\,a^3\,b\,B^2\,c^2\,\text{Log}[a+b\,x]}{15\,d^2}+\frac{43\,a^4\,B^2\,c\,\text{Log}[a+b\,x]}{30\,d}-\frac{2\,a^5\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]}{5\,b}+$$

$$\frac{2\,a^5\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x]}{5\,b}-\frac{2\,a^5\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{5\,b}+2\,a^4\,A\,B\,x\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+$$
$$\frac{8}{5}\,a^4\,B^2\,x\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+\frac{2\,b^4\,B^2\,c^4\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{5\,d^4}-\frac{2\,a\,b^3\,B^2\,c^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{d^3}+$$
$$\frac{4\,a^2\,b^2\,B^2\,c^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{d^2}-\frac{4\,a^3\,b\,B^2\,c\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{d}+4\,a^3\,A\,b\,B\,x^2\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+$$
$$\frac{6}{5}\,a^3\,b\,B^2\,x^2\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]-\frac{b^4\,B^2\,c^3\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{5\,d^3}+\frac{a\,b^3\,B^2\,c^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{d^2}-$$
$$\frac{2\,a^2\,b^2\,B^2\,c\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{d}+4\,a^2\,A\,b^2\,B\,x^3\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+\frac{8}{15}\,a^2\,b^2\,B^2\,x^3\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+$$
$$\frac{2\,b^4\,B^2\,c^2\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{15\,d^2}-\frac{2\,a\,b^3\,B^2\,c\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{3\,d}+2\,a\,A\,b^3\,B\,x^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+$$
$$\frac{1}{10}\,a\,b^3\,B^2\,x^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]-\frac{b^4\,B^2\,c\,x^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{10\,d}+\frac{2}{5}\,A\,b^4\,B\,x^5\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]+$$
$$\frac{2\,a^5\,B^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]}{5\,b}+a^4\,B^2\,x\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]^2+2\,a^3\,b\,B^2\,x^2\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]^2+$$
$$2\,a^2\,b^2\,B^2\,x^3\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]^2+a\,b^3\,B^2\,x^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]^2+\frac{1}{5}\,b^4\,B^2\,x^5\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)}{c+d\,x}\right]^2-$$
$$\frac{2\,A\,b^4\,B\,c^5\,\text{Log}[c+d\,x]}{5\,d^5}-\frac{13\,b^4\,B^2\,c^5\,\text{Log}[c+d\,x]}{30\,d^5}+\frac{2\,a\,A\,b^3\,B\,c^4\,\text{Log}[c+d\,x]}{d^4}+$$
$$\frac{53\,a\,b^3\,B^2\,c^4\,\text{Log}[c+d\,x]}{30\,d^4}-\frac{4\,a^2\,A\,b^2\,B\,c^3\,\text{Log}[c+d\,x]}{d^3}-\frac{38\,a^2\,b^2\,B^2\,c^3\,\text{Log}[c+d\,x]}{15\,d^3}+$$
$$\frac{4\,a^3\,A\,b\,B\,c^2\,\text{Log}[c+d\,x]}{d^2}+\frac{6\,a^3\,b\,B^2\,c^2\,\text{Log}[c+d\,x]}{5\,d^2}-\frac{2\,a^4\,A\,B\,c\,\text{Log}[c+d\,x]}{d}+$$
$$\frac{2\,b^4\,B^2\,c^5\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{5\,d^5}-\frac{2\,a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^4}+$$
$$\frac{4\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^3}-\frac{4\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^2}+$$
$$\frac{2\,a^4\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d}-\frac{2\,b^4\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{5\,d^5}+$$
$$\frac{2\,a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^4}-\frac{4\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^3}+$$
$$\frac{4\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^2}-\frac{2\,a^4\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d}-$$
$$\frac{2\,b^4\,B^2\,c^5\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\,\text{Log}[c+d\,x]}{5\,d^5}+\frac{2\,a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\,\text{Log}[c+d\,x]}{d^4}-$$
$$\frac{4\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\,\text{Log}[c+d\,x]}{d^3}+\frac{4\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\,\text{Log}[c+d\,x]}{d^2}-$$

$$\frac{2\,a^4\,B^2\,c\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\,\text{Log}\left[c+d\,x\right]}{d}-\frac{2\,b^4\,B^2\,c^5\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{5\,d^5}+$$
$$\frac{2\,a\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^4}-\frac{4\,a^2\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+$$
$$\frac{4\,a^3\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-\frac{2\,a^4\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}-\frac{1}{5\,d^5}$$
$$2\,B^2\,c\,\left(b^4\,c^4-5\,a\,b^3\,c^3\,d+10\,a^2\,b^2\,c^2\,d^2-10\,a^3\,b\,c\,d^3+5\,a^4\,d^4\right)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$\left.\frac{2\,a^5\,B^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{5\,b}\right)$$

Problem 98: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 309 leaves, 7 steps):

$$-\frac{B\,\left(b\,c-a\,d\right)\,g^3\,\left(a+b\,x\right)^3\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{6\,b\,d}+$$
$$\frac{g^3\,\left(a+b\,x\right)^4\,\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)^2}{4\,b}+\frac{B\,\left(b\,c-a\,d\right)^2\,g^3\,\left(a+b\,x\right)^2\,\left(3\,A+B+3\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{12\,b\,d^2}-$$
$$\frac{B\,\left(b\,c-a\,d\right)^3\,g^3\,\left(a+b\,x\right)\,\left(6\,A+5\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{12\,b\,d^3}-$$
$$\frac{B\,\left(b\,c-a\,d\right)^4\,g^3\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(6\,A+11\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)}{12\,b\,d^4}-\frac{B^2\,\left(b\,c-a\,d\right)^4\,g^3\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{2\,b\,d^4}$$

Result (type 4, 2110 leaves):

$$\frac{1}{12\,b\,d^4}$$
$$g^3\,\left(-6\,b^4\,B^2\,c^4+30\,a\,b^3\,B^2\,c^3\,d-60\,a^2\,b^2\,B^2\,c^2\,d^2+54\,a^3\,b\,B^2\,c\,d^3-18\,a^4\,B^2\,d^4-6\,A\,b^4\,B\,c^3\,d\,x-5\,b^4\,B^2\,c^3\,d\,x+24\,a\,A\,b^3\,B\,c^2\,d^2\,x+17\,a\,b^3\,B^2\,c^2\,d^2\,x-36\,a^2\,A\,b^2\,B\,c\,d^3\,x-19\,a^2\,b^2\,B^2\,c\,d^3\,x+12\,a^3\,A^2\,b\,d^4\,x+18\,a^3\,A\,b\,B\,d^4\,x+7\,a^3\,b\,B^2\,d^4\,x+3\,A\,b^4\,B\,c^2\,d^2\,x^2+b^4\,B^2\,c^2\,d^2\,x^2-12\,a\,A\,b^3\,B\,c\,d^3\,x^2-2\,a\,b^3\,B^2\,c\,d^3\,x^2+18\,a^2\,A^2\,b^2\,d^4\,x^2+9\,a^2\,A\,b^2\,B\,d^4\,x^2+a^2\,b^2\,B^2\,d^4\,x^2-2\,A\,b^4\,B\,c\,d^3\,x^3+12\,a\,A^2\,b^3\,d^4\,x^3+2\,a\,A\,b^3\,B\,d^4\,x^3+3\,A^2\,b^4\,d^4\,x^4-6\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]+24\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]-36\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]+18\,a^4\,B^2\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]+3\,a^4\,B^2\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]^2+6\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]-24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{c}{d}+x\right]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]-18\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]-3\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2+12\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2-18\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+12\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2-$$

$$3\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[a+b\,x]+10\,a^3\,b\,B^2\,c\,d^3\,\text{Log}[a+b\,x]+6\,a^4\,A\,B\,d^4\,\text{Log}[a+b\,x]-$$
$$7\,a^4\,B^2\,d^4\,\text{Log}[a+b\,x]-6\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x]+6\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x]-$$
$$6\,a^4\,B^2\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-6\,b^4\,B^2\,c^3\,d\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+$$
$$24\,a\,b^3\,B^2\,c^2\,d^2\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]-36\,a^2\,b^2\,B^2\,c\,d^3\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+$$
$$24\,a^3\,A\,b\,B\,d^4\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+18\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+$$
$$3\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]-12\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+$$
$$36\,a^2\,A\,b^2\,B\,d^4\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+9\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]-$$
$$2\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+24\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+$$
$$2\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+$$
$$6\,a^4\,B^2\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]+12\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2+$$
$$18\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2+12\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2+$$
$$3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]^2+6\,A\,b^4\,B\,c^4\,\text{Log}[c+d\,x]+5\,b^4\,B^2\,c^4\,\text{Log}[c+d\,x]-$$
$$24\,a\,A\,b^3\,B\,c^3\,d\,\text{Log}[c+d\,x]-14\,a\,b^3\,B^2\,c^3\,d\,\text{Log}[c+d\,x]+36\,a^2\,A\,b^2\,B\,c^2\,d^2\,\text{Log}[c+d\,x]+$$
$$9\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[c+d\,x]-24\,a^3\,A\,b\,B\,c\,d^3\,\text{Log}[c+d\,x]-6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]+$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]-36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]+$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]+6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]-$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]-$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]+6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x]-$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x]-$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{e\,(a+b\,x)}{c+d\,x}\Big]\,\text{Log}[c+d\,x]+6\,b^4\,B^2\,c^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+6\,b\,B^2\,c\,\Big(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\Big)$$
$$\text{PolyLog}\Big[2,\ \frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-6\,a^4\,B^2\,d^4\,\text{PolyLog}\Big[2,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)$$

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

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

Optimal (type 4, 253 leaves, 6 steps):

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

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

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

Result (type 4, 1292 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 100: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 180 leaves, 5 steps):

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

Result (type 4, 733 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

Problem 101: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 128 leaves, 4 steps):

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

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

Result (type 4, 458 leaves):

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

Problem 106: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 28 leaves, 1 step):

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

Result (type 4, 130 leaves):

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

Problem 128: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 377 leaves, 8 steps):

$$-\frac{B\,(b\,c-a\,d)\,g^4\,(a+b\,x)^4\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{5\,b\,d}+\frac{g^4\,(a+b\,x)^5\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{5\,b}+$$
$$\frac{2\,B\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3\left(2\,A+B+2\,B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{15\,b\,d^2}-$$
$$\frac{B\,(b\,c-a\,d)^3\,g^4\,(a+b\,x)^2\left(6\,A+7\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{15\,b\,d^3}+$$
$$\frac{2\,B\,(b\,c-a\,d)^4\,g^4\,(a+b\,x)\left(6\,A+13\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{15\,b\,d^4}+$$
$$\frac{2\,B\,(b\,c-a\,d)^5\,g^4\left(6\,A+25\,B+6\,B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]}{15\,b\,d^5}+$$
$$\frac{8\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}$$

Result (type 4, 2907 leaves):

$$\frac{1}{15\,b\,d^5}$$
$$g^4\Big(24\,b^5\,B^2\,c^5-144\,a\,b^4\,B^2\,c^4\,d+360\,a^2\,b^3\,B^2\,c^3\,d^2-480\,a^3\,b^2\,B^2\,c^2\,d^3+336\,a^4\,b\,B^2\,c\,d^4-96\,a^5\,B^2\,d^5+$$
$$12\,A\,b^5\,B\,c^4\,d\,x+26\,b^5\,B^2\,c^4\,d\,x-60\,a\,A\,b^4\,B\,c^3\,d^2\,x-118\,a\,b^4\,B^2\,c^3\,d^2\,x+120\,a^2\,A\,b^3\,B\,c^2\,d^3\,x+$$
$$204\,a^2\,b^3\,B^2\,c^2\,d^3\,x-120\,a^3\,A\,b^2\,B\,c\,d^4\,x-158\,a^3\,b^2\,B^2\,c\,d^4\,x+15\,a^4\,A^2\,b\,d^5\,x+48\,a^4\,A\,b\,B\,d^5\,x+$$
$$46\,a^4\,b\,B^2\,d^5\,x-6\,A\,b^5\,B\,c^3\,d^2\,x^2-7\,b^5\,B^2\,c^3\,d^2\,x^2+30\,a\,A\,b^4\,B\,c^2\,d^3\,x^2+27\,a\,b^4\,B^2\,c^2\,d^3\,x^2-$$
$$60\,a^2\,A\,b^3\,B\,c\,d^4\,x^2-33\,a^2\,b^3\,B^2\,c\,d^4\,x^2+30\,a^3\,A^2\,b^2\,d^5\,x^2+36\,a^3\,A\,b^2\,B\,d^5\,x^2+$$
$$13\,a^3\,b^2\,B^2\,d^5\,x^2+4\,A\,b^5\,B\,c^2\,d^3\,x^3+2\,b^5\,B^2\,c^2\,d^3\,x^3-20\,a\,A\,b^4\,B\,c\,d^4\,x^3-4\,a\,b^4\,B^2\,c\,d^4\,x^3+$$
$$30\,a^2\,A^2\,b^3\,d^5\,x^3+16\,a^2\,A\,b^3\,B\,d^5\,x^3+2\,a^2\,b^3\,B^2\,d^5\,x^3-3\,A\,b^5\,B\,c\,d^4\,x^4+15\,a\,A^2\,b^4\,d^5\,x^4+$$
$$3\,a\,A\,b^4\,B\,d^5\,x^4+3\,A^2\,b^5\,d^5\,x^5+24\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b}+x\right]-120\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]-240\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]+96\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$12\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b}+x\right]^2-24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]+120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{c}{d}+x\right]-$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]-96\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]+$$
$$12\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]^2-60\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2+120\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2-$$
$$120\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2+60\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]^2+12\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[a+b\,x]-$$
$$52\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[a+b\,x]+86\,a^4\,b\,B^2\,c\,d^4\,\text{Log}[a+b\,x]+12\,a^5\,A\,B\,d^5\,\text{Log}[a+b\,x]-$$
$$46\,a^5\,B^2\,d^5\,\text{Log}[a+b\,x]-24\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+24\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-$$
$$24\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+12\,b^5\,B^2\,c^4\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-$$
$$60\,a\,b^4\,B^2\,c^3\,d^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+120\,a^2\,b^3\,B^2\,c^2\,d^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-$$

$$120\,a^3\,b^2\,B^2\,c\,d^4\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+30\,a^4\,A\,b\,B\,d^5\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+$$

$$48\,a^4\,b\,B^2\,d^5\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-6\,b^5\,B^2\,c^3\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+$$

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

$$60\,a^3\,A\,b^2\,B\,d^5\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+36\,a^3\,b^2\,B^2\,d^5\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+$$

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

$$60\,a^2\,A\,b^3\,B\,d^5\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+16\,a^2\,b^3\,B^2\,d^5\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-$$

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

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

$$12\,a^5\,B^2\,d^5\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+15\,a^4\,b\,B^2\,d^5\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]^2+$$

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

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

$$12\,A\,b^5\,B\,c^5\,\text{Log}[c+d\,x]-26\,b^5\,B^2\,c^5\,\text{Log}[c+d\,x]+60\,a\,A\,b^4\,B\,c^4\,d\,\text{Log}[c+d\,x]+$$
$$106\,a\,b^4\,B^2\,c^4\,d\,\text{Log}[c+d\,x]-120\,a^2\,A\,b^3\,B\,c^3\,d^2\,\text{Log}[c+d\,x]-152\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[c+d\,x]+$$
$$120\,a^3\,A\,b^2\,B\,c^2\,d^3\,\text{Log}[c+d\,x]+72\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[c+d\,x]-60\,a^4\,A\,b\,B\,c\,d^4\,\text{Log}[c+d\,x]+$$
$$24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+$$
$$120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+$$
$$120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-$$

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

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

$$60\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}[c+d\,x]-24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$24\,b\,B^2\,c\,\left(b^4\,c^4-5\,a\,b^3\,c^3\,d+10\,a^2\,b^2\,c^2\,d^2-10\,a^3\,b\,c\,d^3+5\,a^4\,d^4\right)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$24\,a^5\,B^2\,d^5\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

Problem 129: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 319 leaves, 7 steps):

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

Result (type 4, 2125 leaves):

$$g^3\Bigg(-\frac{6\,a^4\,B^2}{b}-\frac{2\,b^3\,B^2\,c^4}{d^4}+\frac{10\,a\,b^2\,B^2\,c^3}{d^3}-\frac{20\,a^2\,b\,B^2\,c^2}{d^2}+\frac{18\,a^3\,B^2\,c}{d}+a^3\,A^2\,x+$$
$$3\,a^3\,A\,B\,x+\frac{7}{3}\,a^3\,B^2\,x-\frac{A\,b^3\,B\,c^3\,x}{d^3}-\frac{5\,b^3\,B^2\,c^3\,x}{3\,d^3}+\frac{4\,a\,A\,b^2\,B\,c^2\,x}{d^2}+\frac{17\,a\,b^2\,B^2\,c^2\,x}{3\,d^2}-$$
$$\frac{6\,a^2\,A\,b\,B\,c\,x}{d}-\frac{19\,a^2\,b\,B^2\,c\,x}{3\,d}+\frac{3}{2}\,a^2\,A^2\,b\,x^2+\frac{3}{2}\,a^2\,A\,b\,B\,x^2+\frac{1}{3}\,a^2\,b\,B^2\,x^2+\frac{A\,b^3\,B\,c^2\,x^2}{2\,d^2}+$$
$$\frac{b^3\,B^2\,c^2\,x^2}{3\,d^2}-\frac{2\,a\,A\,b^2\,B\,c\,x^2}{d}-\frac{2\,a\,b^2\,B^2\,c\,x^2}{3\,d}+a\,A^2\,b^2\,x^3+\frac{1}{3}\,a\,A\,b^2\,B\,x^3-\frac{A\,b^3\,B\,c\,x^3}{3\,d}+$$
$$\frac{1}{4}\,A^2\,b^3\,x^4+\frac{6\,a^4\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]}{b}-\frac{2\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]}{d^3}+\frac{8\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]}{d^2}-$$

$$\frac{12\,a^3\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]}{d}+\frac{a^4\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{b}+\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]}{d^4}-\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]}{d^3}+$$
$$\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]}{d^2}-\frac{6\,a^3\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]}{d}-\frac{b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^4}+\frac{4\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3}-$$
$$\frac{6\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^2}+\frac{4\,a^3\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d}+\frac{a^4\,A\,B\,\text{Log}[a+b\,x]}{b}-\frac{7\,a^4\,B^2\,\text{Log}[a+b\,x]}{3\,b}-$$
$$\frac{a^2\,b\,B^2\,c^2\,\text{Log}[a+b\,x]}{d^2}+\frac{10\,a^3\,B^2\,c\,\text{Log}[a+b\,x]}{3\,d}-\frac{2\,a^4\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x]}{b}+$$
$$\frac{2\,a^4\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x]}{b}-\frac{2\,a^4\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{b}+2\,a^3\,A\,B\,x\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]+$$
$$3\,a^3\,B^2\,x\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]-\frac{b^3\,B^2\,c^3\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{d^3}+\frac{4\,a\,b^2\,B^2\,c^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{d^2}-$$
$$\frac{6\,a^2\,b\,B^2\,c\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{d}+3\,a^2\,A\,b\,B\,x^2\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]+\frac{3}{2}\,a^2\,b\,B^2\,x^2\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]+$$
$$\frac{b^3\,B^2\,c^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{2\,d^2}-\frac{2\,a\,b^2\,B^2\,c\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{d}+2\,a\,A\,b^2\,B\,x^3\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]+$$
$$\frac{1}{3}\,a\,b^2\,B^2\,x^3\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]-\frac{b^3\,B^2\,c\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{3\,d}+\frac{1}{2}\,A\,b^3\,B\,x^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]+$$
$$\frac{a^4\,B^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]}{b}+a^3\,B^2\,x\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]^2+\frac{3}{2}\,a^2\,b\,B^2\,x^2\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]^2+$$
$$a\,b^2\,B^2\,x^3\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]^2+\frac{1}{4}\,b^3\,B^2\,x^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]^2+\frac{A\,b^3\,B\,c^4\,\text{Log}[c+d\,x]}{d^4}+$$
$$\frac{5\,b^3\,B^2\,c^4\,\text{Log}[c+d\,x]}{3\,d^4}-\frac{4\,a\,A\,b^2\,B\,c^3\,\text{Log}[c+d\,x]}{d^3}-\frac{14\,a\,b^2\,B^2\,c^3\,\text{Log}[c+d\,x]}{3\,d^3}+$$
$$\frac{6\,a^2\,A\,b\,B\,c^2\,\text{Log}[c+d\,x]}{d^2}+\frac{3\,a^2\,b\,B^2\,c^2\,\text{Log}[c+d\,x]}{d^2}-\frac{4\,a^3\,A\,B\,c\,\text{Log}[c+d\,x]}{d}-$$
$$\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^4}+\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^3}-$$
$$\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^2}+\frac{8\,a^3\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d}+$$
$$\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^4}-\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^3}+$$
$$\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^2}-\frac{8\,a^3\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d}+$$

$$\frac{b^3 B^2 c^4 \text{Log}\left[\frac{e (a+b x)^2}{(c+d x)^2}\right] \text{Log}[c+d x]}{d^4} - \frac{4 a b^2 B^2 c^3 \text{Log}\left[\frac{e (a+b x)^2}{(c+d x)^2}\right] \text{Log}[c+d x]}{d^3} +$$
$$\frac{6 a^2 b B^2 c^2 \text{Log}\left[\frac{e (a+b x)^2}{(c+d x)^2}\right] \text{Log}[c+d x]}{d^2} - \frac{4 a^3 B^2 c \text{Log}\left[\frac{e (a+b x)^2}{(c+d x)^2}\right] \text{Log}[c+d x]}{d} +$$
$$\frac{2 b^3 B^2 c^4 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]}{d^4} - \frac{8 a b^2 B^2 c^3 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]}{d^3} +$$
$$\frac{12 a^2 b B^2 c^2 \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]}{d^2} - \frac{8 a^3 B^2 c \text{Log}\left[\frac{a}{b}+x\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]}{d} +$$
$$\frac{2 B^2 c \left(b^3 c^3 - 4 a b^2 c^2 d + 6 a^2 b c d^2 - 4 a^3 d^3\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]}{d^4} - \frac{2 a^4 B^2 \text{PolyLog}\left[2, \frac{b (c+d x)}{b c-a d}\right]}{b}\Bigg)$$

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

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

Optimal (type 4, 255 leaves, 6 steps):

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

Result (type 4, 1316 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 131: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 188 leaves, 5 steps):

$$-\frac{2B(bc-ad)g(a+bx)\left(A+B\log\left[\frac{e(a+bx)^2}{(c+dx)^2}\right]\right)}{bd}+\frac{g(a+bx)^2\left(A+B\log\left[\frac{e(a+bx)^2}{(c+dx)^2}\right]\right)^2}{2b}-$$

$$\frac{2B(bc-ad)^2g\left(A+2B+B\log\left[\frac{e(a+bx)^2}{(c+dx)^2}\right]\right)\log\left[\frac{bc-ad}{b(c+dx)}\right]}{bd^2}-\frac{4B^2(bc-ad)^2g\,\text{PolyLog}\left[2,\frac{d(a+bx)}{b(c+dx)}\right]}{bd^2}$$

Result (type 4, 849 leaves):

$$g\left(aA^2x+\frac{1}{2}A^2bx^2+\right.$$

$$2aAB\left(\frac{2(bc-ad)\left(ad\log[a+bx]-bc\log[c+dx]\right)}{b^2cd-ab d^2}+x\log\left[\frac{a^2e+2abex+b^2ex^2}{(c+dx)^2}\right]\right)+2Ab$$

$$B\left(-(bc-ad)\left(\frac{x}{bd}+\frac{a^2\log[a+bx]}{b^2(bc-ad)}-\frac{c^2\log[c+dx]}{d^2(bc-ad)}\right)+\frac{1}{2}x^2\log\left[\frac{a^2e+2abex+b^2ex^2}{(c+dx)^2}\right]\right)+$$

$$aB^2\left(x\log\left[\frac{a^2e+2abex+b^2ex^2}{(c+dx)^2}\right]^2-\right.$$

$$\frac{1}{bd}4\left(-ad\log\left[\frac{a}{b}+x\right]^2-bc\log\left[\frac{c}{d}+x\right]^2+2ad\log\left[\frac{a}{b}+x\right]\log[a+bx]-\right.$$

$$2ad\log\left[\frac{c}{d}+x\right]\log[a+bx]+2ad\log\left[\frac{c}{d}+x\right]\log\left[\frac{d(a+bx)}{-bc+ad}\right]-ad\log[a+bx]$$

$$\log\left[\frac{e(a+bx)^2}{(c+dx)^2}\right]-2bc\log\left[\frac{a}{b}+x\right]\log[c+dx]+2bc\log\left[\frac{c}{d}+x\right]\log[c+dx]+$$

$$bc\log\left[\frac{e(a+bx)^2}{(c+dx)^2}\right]\log[c+dx]+2bc\log\left[\frac{a}{b}+x\right]\log\left[\frac{b(c+dx)}{bc-ad}\right]+$$

$$\left.\left.2bc\,\text{PolyLog}\left[2,\frac{d(a+bx)}{-bc+ad}\right]+2ad\,\text{PolyLog}\left[2,\frac{b(c+dx)}{bc-ad}\right]\right)\right)+$$

$$bB^2\left(\frac{1}{2}x^2\log\left[\frac{a^2e+2abex+b^2ex^2}{(c+dx)^2}\right]^2-\frac{1}{b^2d^2}2\left(-2d(-bc+ad)(a+bx)\left(-1+\log\left[\frac{a}{b}+x\right]\right)+\right.\right.$$

$$a^2d^2\log\left[\frac{a}{b}+x\right]^2-2b(bc-ad)(c+dx)\left(-1+\log\left[\frac{c}{d}+x\right]\right)+$$

$$b^2c^2\log\left[\frac{c}{d}+x\right]^2-\left(2\log\left[\frac{a}{b}+x\right]-2\log\left[\frac{c}{d}+x\right]-\log\left[\frac{e(a+bx)^2}{(c+dx)^2}\right]\right)$$

$$\left(a^2d^2\log[a+bx]-b\left(d(-bc+ad)x+bc^2\log[c+dx]\right)\right)-$$

$$2b^2c^2\left(\log\left[\frac{a}{b}+x\right]\log\left[\frac{b(c+dx)}{bc-ad}\right]+\text{PolyLog}\left[2,\frac{d(a+bx)}{-bc+ad}\right]\right)-$$

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

Problem 132: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 132 leaves, 4 steps) :

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

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

Result (type 4, 622 leaves) :

$$\frac{A^2 \operatorname{Log}[a+b x]}{b g}+\frac{1}{g} 2 A B\left(\frac{\operatorname{Log}\left[\frac{a}{b}+x\right]^2}{b}+\frac{1}{b}\right.$$

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

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

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

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

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

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

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

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

Problem 140: Unable to integrate problem.

$$\int \frac{1}{(a g+b g x)^2\left(A+B \operatorname{Log}\left[\frac{e(a+b x)^2}{(c+d x)^2}\right]\right)} \mathrm{d}x$$

Optimal (type 4, 91 leaves, 3 steps):

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

Result (type 8, 36 leaves):

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

Problem 141: Unable to integrate problem.

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

Optimal (type 4, 149 leaves, 7 steps):

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

Result (type 8, 36 leaves):

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

Problem 145: Unable to integrate problem.

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

Optimal (type 4, 147 leaves, 4 steps):

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

Result (type 8, 36 leaves):

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

Problem 146: Unable to integrate problem.

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

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

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

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

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

Result (type 8, 36 leaves):

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

Problem 156: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 322 leaves, 8 steps):

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

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

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

$$\frac{B\,(b\,c-a\,d)^3\,n\,(a+b\,x)\left(6\,A+5\,B\,n+6\,B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)}{12\,b\,d^3}-\frac{1}{12\,b\,d^4}$$

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

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

Result (type 4, 1709 leaves):

$$\frac{1}{12\,b\,d^4}\Big(-24\,a^4\,A\,B\,d^4\,n+6\,a\,b^3\,B^2\,c^3\,d\,n^2-24\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2+36\,a^3\,b\,B^2\,c\,d^3\,n^2-24\,a^4\,B^2\,d^4\,n^2+12\,a^3\,A^2\,b\,d^4\,x-6\,A\,b^4\,B\,c^3\,d\,n\,x+24\,a\,A\,b^3\,B\,c^2\,d^2\,n\,x-36\,a^2\,A\,b^2\,B\,c\,d^3\,n\,x+18\,a^3\,A\,b\,B\,d^4\,n\,x-5\,b^4\,B^2\,c^3\,d\,n^2\,x+17\,a\,b^3\,B^2\,c^2\,d^2\,n^2\,x-19\,a^2\,b^2\,B^2\,c\,d^3\,n^2\,x+7\,a^3\,b\,B^2\,d^4\,n^2\,x+18\,a^2\,A^2\,b^2\,d^4\,x^2+3\,A\,b^4\,B\,c^2\,d^2\,n\,x^2-12\,a\,A\,b^3\,B\,c\,d^3\,n\,x^2+9\,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\,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^4-3\,a^4\,B^2\,d^4\,n^2\,\text{Log}[a+b\,x]^2+6\,A\,b^4\,B\,c^4\,n\,\text{Log}[c+d\,x]-24\,a\,A\,b^3\,B\,c^3\,d\,n\,\text{Log}[c+d\,x]+36\,a^2\,A\,b^2\,B\,c^2\,d^2\,n\,\text{Log}[c+d\,x]-24\,a^3\,A\,b\,B\,c\,d^3\,n\,\text{Log}[c+d\,x]+11\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x]-38\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x]+45\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]-18\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[c+d\,x]-24\,a^4\,B^2\,d^4\,n^2\,\text{Log}[c+d\,x]+3\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x]^2-12\,a\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x]^2+18\,a^2\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]^2-12\,a^3\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[c+d\,x]^2-24\,a^4\,B^2\,d^4\,n\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+24\,a^3\,A\,b\,B\,d^4\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-6\,b^4\,B^2\,c^3\,d\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+24\,a\,b^3\,B^2\,c^2\,d^2\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-36\,a^2\,b^2\,B^2\,c\,d^3\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+18\,a^3\,b\,B^2\,d^4\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+36\,a^2\,A\,b^2\,B\,d^4\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+3\,b^4\,B^2\,c^2\,d^2\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-12\,a\,b^3\,B^2\,c\,d^3\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+9\,a^2\,b^2\,B^2\,d^4\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+24\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-2\,b^4\,B^2\,c\,d^3\,n\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+2\,a\,b^3\,B^2\,d^4\,n\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+6\,b^4\,B^2\,c^4\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-24\,a\,b^3\,B^2\,c^3\,d\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-24\,a^3\,b\,B^2\,c\,d^3\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+12\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+18\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+12\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+B\,n\,\text{Log}[a+b\,x]\Big(-6\,b\,B\,c\,\left(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\right)n\,\text{Log}[c+d\,x]+6\,B\,(b\,c-a\,d)^4\,n\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+a\,d\,\left(-6\,b^3\,B\,c^3\,n+21\,a\,b^2\,B\,c^2\,d\,n-26\,a^2\,b\,B\,c\,d^2\,n+a^3\,d^3\,(6\,A+35\,B\,n)+6\,a^3\,B\,d^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\Big)+6\,B^2\,(b\,c-a\,d)^4\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\Big)$$

Problem 157: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 263 leaves, 7 steps) :

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

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

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

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

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

Result (type 4, 1149 leaves):

$$\frac{1}{3\,b\,d^3}\left(-6\,a^3\,A\,B\,d^3\,n-2\,a\,b^2\,B^2\,c^2\,d\,n^2+6\,a^2\,b\,B^2\,c\,d^2\,n^2-6\,a^3\,B^2\,d^3\,n^2+3\,a^2\,A^2\,b\,d^3\,x+2\,A\,b^3\,B\,c^2\,d\,n\,x-\right.$$
$$6\,a\,A\,b^2\,B\,c\,d^2\,n\,x+4\,a^2\,A\,b\,B\,d^3\,n\,x+b^3\,B^2\,c^2\,d\,n^2\,x-2\,a\,b^2\,B^2\,c\,d^2\,n^2\,x+a^2\,b\,B^2\,d^3\,n^2\,x+3\,a\,A^2\,b^2\,d^3\,x^2-$$
$$A\,b^3\,B\,c\,d^2\,n\,x^2+a\,A\,b^2\,B\,d^3\,n\,x^2+A^2\,b^3\,d^3\,x^3-a^3\,B^2\,d^3\,n^2\,\text{Log}\left[a+b\,x\right]^2-2\,A\,b^3\,B\,c^3\,n\,\text{Log}\left[c+d\,x\right]+$$
$$6\,a\,A\,b^2\,B\,c^2\,d\,n\,\text{Log}\left[c+d\,x\right]-6\,a^2\,A\,b\,B\,c\,d^2\,n\,\text{Log}\left[c+d\,x\right]-3\,b^3\,B^2\,c^3\,n^2\,\text{Log}\left[c+d\,x\right]+$$
$$7\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\left[c+d\,x\right]-4\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\left[c+d\,x\right]-6\,a^3\,B^2\,d^3\,n^2\,\text{Log}\left[c+d\,x\right]-$$
$$b^3\,B^2\,c^3\,n^2\,\text{Log}\left[c+d\,x\right]^2+3\,a\,b^2\,B^2\,c^2\,d\,n^2\,\text{Log}\left[c+d\,x\right]^2-3\,a^2\,b\,B^2\,c\,d^2\,n^2\,\text{Log}\left[c+d\,x\right]^2-$$
$$6\,a^3\,B^2\,d^3\,n\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+6\,a^2\,A\,b\,B\,d^3\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$2\,b^3\,B^2\,c^2\,d\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-6\,a\,b^2\,B^2\,c\,d^2\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$4\,a^2\,b\,B^2\,d^3\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+6\,a\,A\,b^2\,B\,d^3\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$b^3\,B^2\,c\,d^2\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+a\,b^2\,B^2\,d^3\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$2\,A\,b^3\,B\,d^3\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-2\,b^3\,B^2\,c^3\,n\,\text{Log}\left[c+d\,x\right]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$6\,a\,b^2\,B^2\,c^2\,d\,n\,\text{Log}\left[c+d\,x\right]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$6\,a^2\,b\,B^2\,c\,d^2\,n\,\text{Log}\left[c+d\,x\right]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$3\,a^2\,b\,B^2\,d^3\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+3\,a\,b^2\,B^2\,d^3\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$b^3\,B^2\,d^3\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+B\,n\,\text{Log}\left[a+b\,x\right]$$
$$\left(2\,b\,B\,c\,\left(b^2\,c^2-3\,a\,b\,c\,d+3\,a^2\,d^2\right)\,n\,\text{Log}\left[c+d\,x\right]-2\,B\,(b\,c-a\,d)^3\,n\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+\right.$$
$$\left.\left.a\,d\,\left(2\,b^2\,B\,c^2\,n-5\,a\,b\,B\,c\,d\,n+a^2\,d^2\,\left(2\,A+9\,B\,n\right)+2\,a^2\,B\,d^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\right)-$$
$$\left.2\,B^2\,(b\,c-a\,d)^3\,n^2\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\right)$$

Problem 158: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 195 leaves, 6 steps):

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

Result (type 4, 656 leaves):

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

Problem 159: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 131 leaves, 5 steps):

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

Result (type 4, 443 leaves):

$$\frac{1}{3 b}\left(B^2 n^2 \operatorname{Log}[a+b x]^3+3 B n \operatorname{Log}[a+b x]^2 \left(A+B \left(-n \operatorname{Log}[a+b x]+n \operatorname{Log}[c+d x]+\operatorname{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)\right)+3 \operatorname{Log}[a+b x] \left(A+B \left(-n \operatorname{Log}[a+b x]+n \operatorname{Log}[c+d x]+\operatorname{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)\right)^2-6 A B n \left(\operatorname{Log}\left[\frac{d \left(a+b x\right)}{-b c+a d}\right] \operatorname{Log}[c+d x]+\operatorname{PolyLog}\left[2, \frac{b \left(c+d x\right)}{b c-a d}\right]\right)-6 B^2 n \left(-n \operatorname{Log}[a+b x]+n \operatorname{Log}[c+d x]+\operatorname{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right) \left(\operatorname{Log}\left[\frac{d \left(a+b x\right)}{-b c+a d}\right] \operatorname{Log}[c+d x]+\operatorname{PolyLog}\left[2, \frac{b \left(c+d x\right)}{b c-a d}\right]\right)-6 B^2 n^2 \left(\frac{1}{2} \operatorname{Log}[a+b x]^2 \left(\operatorname{Log}[c+d x]-\operatorname{Log}\left[\frac{b \left(c+d x\right)}{b c-a d}\right]\right)-\operatorname{Log}[a+b x] \operatorname{PolyLog}\left[2, \frac{d \left(a+b x\right)}{-b c+a d}\right]+\operatorname{PolyLog}\left[3, \frac{d \left(a+b x\right)}{-b c+a d}\right]\right)+3 B^2 n^2 \left(\operatorname{Log}\left[\frac{d \left(a+b x\right)}{-b c+a d}\right] \operatorname{Log}[c+d x]^2+2 \operatorname{Log}[c+d x] \operatorname{PolyLog}\left[2, \frac{b \left(c+d x\right)}{b c-a d}\right]-2 \operatorname{PolyLog}\left[3, \frac{b \left(c+d x\right)}{b c-a d}\right]\right)\right)$$

Problem 164: Result more than twice size of optimal antiderivative.

$$\int \left(a+b x\right)^3 \left(A+B \operatorname{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^3 \mathbb{d}x$$

Optimal (type 4, 809 leaves, 27 steps):

$$-\frac{B^3 (b c-a d)^3 n^3 x}{4 d^3}-\frac{B^3 (b c-a d)^4 n^3 \text{Log}\left[\frac{a+b x}{c+d x}\right]}{4 b d^4}+\frac{3 B^3 (b c-a d)^4 n^3 \text{Log}[c+d x]}{2 b d^4}-$$
$$\frac{7 B^2 (b c-a d)^3 n^2 (a+b x) \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)}{4 b d^3}+$$
$$\frac{b B^2 (b c-a d)^2 n^2 (c+d x)^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)}{4 d^4}-$$
$$\frac{9 B^2 (b c-a d)^4 n^2 \text{Log}\left[\frac{b c-a d}{b (c+d x)}\right] \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)}{2 b d^4}-$$
$$\frac{9 B (b c-a d)^3 n (a+b x) \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2}{4 b d^3}+$$
$$\frac{9 b B (b c-a d)^2 n (c+d x)^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2}{8 d^4}-$$
$$\frac{b^2 B (b c-a d) n (c+d x)^3 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2}{4 d^4}-$$
$$\frac{3 B (b c-a d)^4 n \text{Log}\left[\frac{b c-a d}{b (c+d x)}\right] \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2}{4 b d^4}+$$
$$\frac{(a+b x)^4 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^3}{4 b}+\frac{1}{4 b d^4}$$
$$7 B^2 (b c-a d)^4 n^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right) \text{Log}\left[1-\frac{b (c+d x)}{d (a+b x)}\right]-$$
$$\frac{9 B^3 (b c-a d)^4 n^3 \text{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{2 b d^4}-\frac{1}{2 b d^4}$$
$$3 B^2 (b c-a d)^4 n^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]-$$
$$\frac{7 B^3 (b c-a d)^4 n^3 \text{PolyLog}\left[2, \frac{b (c+d x)}{d (a+b x)}\right]}{4 b d^4}+\frac{3 B^3 (b c-a d)^4 n^3 \text{PolyLog}\left[3, \frac{d (a+b x)}{b (c+d x)}\right]}{2 b d^4}$$

Result (type 4, 6899 leaves) :

$$\frac{1}{8 b d^4}\Big(12 a A b^3 B^2 c^3 d n^2-48 a^2 A b^2 B^2 c^2 d^2 n^2+60 a^3 A b B^2 c d^3 n^2-48 a^4 A B^2 d^4 n^2-12 b^4 B^3 c^4 n^3+$$
$$58 a b^3 B^3 c^3 d n^3-100 a^2 b^2 B^3 c^2 d^2 n^3+54 a^3 b B^3 c d^3 n^3+12 a^4 B^3 d^4 n^3+8 a^3 A^3 b d^4 x-$$
$$6 A^2 b^4 B c^3 d n x+24 a A^2 b^3 B c^2 d^2 n x-36 a^2 A^2 b^2 B c d^3 n x+18 a^3 A^2 b B d^4 n x-$$
$$10 A b^4 B^2 c^3 d n^2 x+34 a A b^3 B^2 c^2 d^2 n^2 x-38 a^2 A b^2 B^2 c d^3 n^2 x+14 a^3 A b B^2 d^4 n^2 x-$$
$$2 b^4 B^3 c^3 d n^3 x+6 a b^3 B^3 c^2 d^2 n^3 x-6 a^2 b^2 B^3 c d^3 n^3 x+2 a^3 b B^3 d^4 n^3 x+12 a^2 A^3 b^2 d^4 x^2+$$
$$3 A^2 b^4 B c^2 d^2 n x^2-12 a A^2 b^3 B c d^3 n x^2+9 a^2 A^2 b^2 B d^4 n x^2+2 A b^4 B^2 c^2 d^2 n^2 x^2-$$
$$4 a A b^3 B^2 c d^3 n^2 x^2+2 a^2 A b^2 B^2 d^4 n^2 x^2+8 a A^3 b^3 d^4 x^3-2 A^2 b^4 B c d^3 n x^3+$$
$$2 a A^2 b^3 B d^4 n x^3+2 A^3 b^4 d^4 x^4+6 a^4 A^2 B d^4 n \text{Log}[a+b x]-12 a A b^3 B^2 c^3 d n^2 \text{Log}[a+b x]+$$
$$42 a^2 A b^2 B^2 c^2 d^2 n^2 \text{Log}[a+b x]-52 a^3 A b B^2 c d^3 n^2 \text{Log}[a+b x]+22 a^4 A B^2 d^4 n^2 \text{Log}[a+b x]-$$
$$22 a b^3 B^3 c^3 d n^3 \text{Log}[a+b x]+80 a^2 b^2 B^3 c^2 d^2 n^3 \text{Log}[a+b x]-94 a^3 b B^3 c d^3 n^3 \text{Log}[a+b x]+$$
$$60 a^4 B^3 d^4 n^3 \text{Log}[a+b x]-6 a^4 A B^2 d^4 n^2 \text{Log}[a+b x]^2+6 a b^3 B^3 c^3 d n^3 \text{Log}[a+b x]^2-$$
$$21 a^2 b^2 B^3 c^2 d^2 n^3 \text{Log}[a+b x]^2+26 a^3 b B^3 c d^3 n^3 \text{Log}[a+b x]^2-11 a^4 B^3 d^4 n^3 \text{Log}[a+b x]^2+$$
$$2 a^4 B^3 d^4 n^3 \text{Log}[a+b x]^3+6 A^2 b^4 B c^4 n \text{Log}[c+d x]-24 a A^2 b^3 B c^3 d n \text{Log}[c+d x]+$$

$$36\,a^2\,A^2\,b^2\,B\,c^2\,d^2\,n\,\text{Log}[c+d\,x]-24\,a^3\,A^2\,b\,B\,c\,d^3\,n\,\text{Log}[c+d\,x]+22\,A\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x]-$$
$$76\,a\,A\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x]+90\,a^2\,A\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]-36\,a^3\,A\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[c+d\,x]+$$
$$12\,b^4\,B^3\,c^4\,n^3\,\text{Log}[c+d\,x]-26\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[c+d\,x]-8\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[c+d\,x]+$$
$$46\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[c+d\,x]-48\,a^4\,B^3\,d^4\,n^3\,\text{Log}[c+d\,x]-12\,A\,b^4\,B^2\,c^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+$$
$$48\,a\,A\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]-72\,a^2\,A\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+$$
$$48\,a^3\,A\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+12\,a^4\,A\,B^2\,d^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]-$$
$$22\,b^4\,B^3\,c^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+76\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]-$$
$$90\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+36\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+$$
$$6\,b^4\,B^3\,c^4\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]-24\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]+$$
$$36\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]-24\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]-$$
$$12\,a^4\,B^3\,d^4\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]-12\,a^4\,A\,B^2\,d^4\,n^2\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]+$$
$$12\,a^4\,B^3\,d^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]+6\,A\,b^4\,B^2\,c^4\,n^2\,\text{Log}[c+d\,x]^2-$$
$$24\,a\,A\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[c+d\,x]^2+36\,a^2\,A\,b^2\,B^2\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]^2-$$
$$24\,a^3\,A\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[c+d\,x]^2+11\,b^4\,B^3\,c^4\,n^3\,\text{Log}[c+d\,x]^2-38\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[c+d\,x]^2+$$
$$45\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[c+d\,x]^2-18\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[c+d\,x]^2-$$
$$12\,b^4\,B^3\,c^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2+48\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2-$$
$$72\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2+48\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2+$$
$$6\,a^4\,B^3\,d^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2+6\,b^4\,B^3\,c^4\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2-$$
$$24\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2+36\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2-$$
$$24\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2-6\,a^4\,B^3\,d^4\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2+$$
$$2\,b^4\,B^3\,c^4\,n^3\,\text{Log}[c+d\,x]^3-8\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[c+d\,x]^3+12\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[c+d\,x]^3-$$
$$8\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[c+d\,x]^3+12\,A\,b^4\,B^2\,c^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-$$
$$48\,a\,A\,b^3\,B^2\,c^3\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+72\,a^2\,A\,b^2\,B^2\,c^2\,d^2\,n^2$$
$$\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-48\,a^3\,A\,b\,B^2\,c\,d^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$22\,b^4\,B^3\,c^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-88\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$132\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-88\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$22\,a^4\,B^3\,d^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-6\,b^4\,B^3\,c^4\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$24\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-36\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$24\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+6\,a^4\,B^3\,d^4\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$12\,b^4\,B^3\,c^4\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-$$

$$48\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$72\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$48\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$12\,a\,b^3\,B^3\,c^3\,d\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-48\,a^2\,b^2\,B^3\,c^2\,d^2\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$60\,a^3\,b\,B^3\,c\,d^3\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-48\,a^4\,B^3\,d^4\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$24\,a^3\,A^2\,b\,B\,d^4\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-12\,A\,b^4\,B^2\,c^3\,d\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$48\,a\,A\,b^3\,B^2\,c^2\,d^2\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-72\,a^2\,A\,b^2\,B^2\,c\,d^3\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$36\,a^3\,A\,b\,B^2\,d^4\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-10\,b^4\,B^3\,c^3\,d\,n^2\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$34\,a\,b^3\,B^3\,c^2\,d^2\,n^2\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-38\,a^2\,b^2\,B^3\,c\,d^3\,n^2\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$14\,a^3\,b\,B^3\,d^4\,n^2\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+36\,a^2\,A^2\,b^2\,B\,d^4\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$6\,A\,b^4\,B^2\,c^2\,d^2\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-24\,a\,A\,b^3\,B^2\,c\,d^3\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$18\,a^2\,A\,b^2\,B^2\,d^4\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+2\,b^4\,B^3\,c^2\,d^2\,n^2\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$4\,a\,b^3\,B^3\,c\,d^3\,n^2\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+2\,a^2\,b^2\,B^3\,d^4\,n^2\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$24\,a\,A^2\,b^3\,B\,d^4\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-4\,A\,b^4\,B^2\,c\,d^3\,n\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$4\,a\,A\,b^3\,B^2\,d^4\,n\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+6\,A^2\,b^4\,B\,d^4\,x^4\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$12\,a^4\,A\,B^2\,d^4\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$12\,a\,b^3\,B^3\,c^3\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$42\,a^2\,b^2\,B^3\,c^2\,d^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$52\,a^3\,b\,B^3\,c\,d^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$22\,a^4\,B^3\,d^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$6\,a^4\,B^3\,d^4\,n^2\,\text{Log}[a+b\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$12\,A\,b^4\,B^2\,c^4\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$48\,a\,A\,b^3\,B^2\,c^3\,d\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$72\,a^2\,A\,b^2\,B^2\,c^2\,d^2\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$48\,a^3\,A\,b\,B^2\,c\,d^3\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$22\,b^4\,B^3\,c^4\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$76\,a\,b^3\,B^3\,c^3\,d\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$90\,a^2\,b^2\,B^3\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$36\,a^3\,b\,B^3\,c\,d^3\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$12\,b^4\,B^3\,c^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$48\,a\,b^3\,B^3\,c^3\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$72\,a^2\,b^2\,B^3\,c^2\,d^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$48\,a^3\,b\,B^3\,c\,d^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$12\,a^4\,B^3\,d^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$12\,a^4\,B^3\,d^4\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$6\,b^4\,B^3\,c^4\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$24\,a\,b^3\,B^3\,c^3\,d\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$36\,a^2\,b^2\,B^3\,c^2\,d^2\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$24\,a^3\,b\,B^3\,c\,d^3\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$12\,b^4\,B^3\,c^4\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$

$$48\,a\,b^3\,B^3\,c^3\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$72\,a^2\,b^2\,B^3\,c^2\,d^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$48\,a^3\,b\,B^3\,c\,d^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$24\,a^3\,A\,b\,B^2\,d^4\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-6\,b^4\,B^3\,c^3\,d\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$24\,a\,b^3\,B^3\,c^2\,d^2\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-36\,a^2\,b^2\,B^3\,c\,d^3\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$18\,a^3\,b\,B^3\,d^4\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+36\,a^2\,A\,b^2\,B^2\,d^4\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$3\,b^4\,B^3\,c^2\,d^2\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-12\,a\,b^3\,B^3\,c\,d^3\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$9\,a^2\,b^2\,B^3\,d^4\,n\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+24\,a\,A\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-$$
$$2\,b^4\,B^3\,c\,d^3\,n\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+2\,a\,b^3\,B^3\,d^4\,n\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$6\,A\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+6\,a^4\,B^3\,d^4\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$6\,b^4\,B^3\,c^4\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-$$
$$24\,a\,b^3\,B^3\,c^3\,d\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$36\,a^2\,b^2\,B^3\,c^2\,d^2\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-$$
$$24\,a^3\,b\,B^3\,c\,d^3\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$8\,a^3\,b\,B^3\,d^4\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3+12\,a^2\,b^2\,B^3\,d^4\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3+$$
$$8\,a\,b^3\,B^3\,d^4\,x^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3+2\,b^4\,B^3\,d^4\,x^4\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3+$$
$$2\,B^2\,n^2\,\Big(6\,A\,b^4\,c^4-24\,a\,A\,b^3\,c^3\,d+36\,a^2\,A\,b^2\,c^2\,d^2-24\,a^3\,A\,b\,c\,d^3+11\,b^4\,B\,c^4\,n-44\,a\,b^3\,B\,c^3\,d\,n+$$
$$66\,a^2\,b^2\,B\,c^2\,d^2\,n-44\,a^3\,b\,B\,c\,d^3\,n+11\,a^4\,B\,d^4\,n+6\,a^4\,B\,d^4\,n\,\text{Log}[a+b\,x]+6\,b\,B\,c$$
$$\left(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\right)n\,\text{Log}[c+d\,x]+6\,b^4\,B\,c^4\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$24\,a\,b^3\,B\,c^3\,d\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+36\,a^2\,b^2\,B\,c^2\,d^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$24\,a^3\,b\,B\,c\,d^3\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\Big)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$
$$12\,B^2\,n^2\,\Big(a^4\,B\,d^4\,n\,\text{Log}[a+b\,x]+b\,B\,c\,\left(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\right)n\,\text{Log}[c+d\,x]-$$
$$a^4\,d^4\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\Big)\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$12\,b^4\,B^3\,c^4\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+48\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$72\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+48\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$12\,a^4\,B^3\,d^4\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-12\,b^4\,B^3\,c^4\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$48\,a\,b^3\,B^3\,c^3\,d\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-72\,a^2\,b^2\,B^3\,c^2\,d^2\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$48\,a^3\,b\,B^3\,c\,d^3\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-12\,a^4\,B^3\,d^4\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Big)$$

Problem 165: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 614 leaves, 17 steps):

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

Result (type 4, 4819 leaves):

$$-\frac{6 a^3 A B^2 n^2}{b}-\frac{2 a A b B^2 c^2 n^2}{d^2}+\frac{4 a^2 A B^2 c n^2}{d}+\frac{2 a^3 B^3 n^3}{b}+\frac{2 b^2 B^3 c^3 n^3}{d^3}-\frac{7 a b B^3 c^2 n^3}{d^2}+$$
$$\frac{5 a^2 B^3 c n^3}{d}+a^2 A^3 x+2 a^2 A^2 B n x+\frac{A^2 b^2 B c^2 n x}{d^2}-\frac{3 a A^2 b B c n x}{d}+a^2 A B^2 n^2 x+\frac{A b^2 B^2 c^2 n^2 x}{d^2}-$$
$$\frac{2 a A b B^2 c n^2 x}{d}+a A^3 b x^2+\frac{1}{2} a A^2 b B n x^2-\frac{A^2 b^2 B c n x^2}{2 d}+\frac{1}{3} A^3 b^2 x^3+\frac{a^3 A^2 B n \text{Log}[a+b x]}{b}+$$
$$\frac{3 a^3 A B^2 n^2 \text{Log}[a+b x]}{b}+\frac{2 a A b B^2 c^2 n^2 \text{Log}[a+b x]}{d^2}-\frac{5 a^2 A B^2 c n^2 \text{Log}[a+b x]}{d}+$$
$$\frac{7 a^3 B^3 n^3 \text{Log}[a+b x]}{b}+\frac{3 a b B^3 c^2 n^3 \text{Log}[a+b x]}{d^2}-\frac{6 a^2 B^3 c n^3 \text{Log}[a+b x]}{d}-$$
$$\frac{a^3 A B^2 n^2 \text{Log}[a+b x]^2}{b}-\frac{3 a^3 B^3 n^3 \text{Log}[a+b x]^2}{2 b}-\frac{a b B^3 c^2 n^3 \text{Log}[a+b x]^2}{d^2}+$$
$$\frac{5 a^2 B^3 c n^3 \text{Log}[a+b x]^2}{2 d}+\frac{a^3 B^3 n^3 \text{Log}[a+b x]^3}{3 b}-\frac{A^2 b^2 B c^3 n \text{Log}[c+d x]}{d^3}+$$
$$\frac{3 a A^2 b B c^2 n \text{Log}[c+d x]}{d^2}-\frac{3 a^2 A^2 B c n \text{Log}[c+d x]}{d}-\frac{3 A b^2 B^2 c^3 n^2 \text{Log}[c+d x]}{d^3}+$$

$$\frac{7\,a\,A\,b\,B^2\,c^2\,n^2\,\text{Log}[c+d\,x]}{d^2}-\frac{4\,a^2\,A\,B^2\,c\,n^2\,\text{Log}[c+d\,x]}{d}-\frac{6\,a^3\,B^3\,n^3\,\text{Log}[c+d\,x]}{b}-$$
$$\frac{b^2\,B^3\,c^3\,n^3\,\text{Log}[c+d\,x]}{d^3}+\frac{3\,a^2\,B^3\,c\,n^3\,\text{Log}[c+d\,x]}{d}+\frac{2\,a^3\,A\,B^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b}+$$
$$\frac{2\,A\,b^2\,B^2\,c^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^3}-\frac{6\,a\,A\,b\,B^2\,c^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^2}+$$
$$\frac{6\,a^2\,A\,B^2\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d}+\frac{3\,b^2\,B^3\,c^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^3}-$$
$$\frac{7\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^2}+\frac{4\,a^2\,B^3\,c\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d}-$$
$$\frac{2\,a^3\,B^3\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{b}-\frac{b^2\,B^3\,c^3\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{d^3}+$$
$$\frac{3\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{d^2}-\frac{3\,a^2\,B^3\,c\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{d}-$$
$$\frac{2\,a^3\,A\,B^2\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b}+\frac{2\,a^3\,B^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b}-$$
$$\frac{A\,b^2\,B^2\,c^3\,n^2\,\text{Log}[c+d\,x]^2}{d^3}+\frac{3\,a\,A\,b\,B^2\,c^2\,n^2\,\text{Log}[c+d\,x]^2}{d^2}-\frac{3\,a^2\,A\,B^2\,c\,n^2\,\text{Log}[c+d\,x]^2}{d}-$$
$$\frac{3\,b^2\,B^3\,c^3\,n^3\,\text{Log}[c+d\,x]^2}{2\,d^3}+\frac{7\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[c+d\,x]^2}{2\,d^2}-\frac{2\,a^2\,B^3\,c\,n^3\,\text{Log}[c+d\,x]^2}{d}+$$
$$\frac{a^3\,B^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{b}+\frac{2\,b^2\,B^3\,c^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{d^3}-$$
$$\frac{6\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{d^2}+\frac{6\,a^2\,B^3\,c\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{d}-$$
$$\frac{a^3\,B^3\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]^2}{b}-\frac{b^2\,B^3\,c^3\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]^2}{d^3}+$$
$$\frac{3\,a\,b\,B^3\,c^2\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]^2}{d^2}-\frac{3\,a^2\,B^3\,c\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]^2}{d}-$$
$$\frac{b^2\,B^3\,c^3\,n^3\,\text{Log}[c+d\,x]^3}{3\,d^3}+\frac{a\,b\,B^3\,c^2\,n^3\,\text{Log}[c+d\,x]^3}{d^2}-\frac{a^2\,B^3\,c\,n^3\,\text{Log}[c+d\,x]^3}{d}-$$
$$\frac{2\,A\,b^2\,B^2\,c^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+\frac{6\,a\,A\,b\,B^2\,c^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-$$
$$\frac{6\,a^2\,A\,B^2\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}+\frac{3\,a^3\,B^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b}-$$
$$\frac{3\,b^2\,B^3\,c^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+\frac{9\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-$$
$$\frac{9\,a^2\,B^3\,c\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}+\frac{a^3\,B^3\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b}+$$
$$\frac{b^2\,B^3\,c^3\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}-\frac{3\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}+$$

$$\frac{3\,a^2\,B^3\,c\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}-\frac{2\,b^2\,B^3\,c^3\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+$$
$$\frac{6\,a\,b\,B^3\,c^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-$$
$$\frac{6\,a^2\,B^3\,c\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}-\frac{6\,a^3\,B^3\,n^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{b}-$$
$$\frac{2\,a\,b\,B^3\,c^2\,n^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^2}+\frac{4\,a^2\,B^3\,c\,n^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}+$$
$$3\,a^2\,A^2\,B\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]+4\,a^2\,A\,B^2\,n\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]+$$
$$\frac{2\,A\,b^2\,B^2\,c^2\,n\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^2}-\frac{6\,a\,A\,b\,B^2\,c\,n\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}+$$
$$a^2\,B^3\,n^2\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]+\frac{b^2\,B^3\,c^2\,n^2\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^2}-$$
$$\frac{2\,a\,b\,B^3\,c\,n^2\,x\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}+3\,a\,A^2\,b\,B\,x^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]+$$
$$a\,A\,b\,B^2\,n\,x^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]-\frac{A\,b^2\,B^2\,c\,n\,x^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}+$$
$$A^2\,b^2\,B\,x^3\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]+\frac{2\,a^3\,A\,B^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{b}+$$
$$\frac{3\,a^3\,B^3\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{b}+$$
$$\frac{2\,a\,b\,B^3\,c^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^2}-$$
$$\frac{5\,a^2\,B^3\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}-$$
$$\frac{a^3\,B^3\,n^2\,\text{Log}[a+b\,x]^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{b}-$$
$$\frac{2\,A\,b^2\,B^2\,c^3\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^3}+$$
$$\frac{6\,a\,A\,b\,B^2\,c^2\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^2}-$$
$$\frac{6\,a^2\,A\,B^2\,c\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}-$$
$$\frac{3\,b^2\,B^3\,c^3\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^3}+$$
$$\frac{7\,a\,b\,B^3\,c^2\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d^2}-$$
$$\frac{4\,a^2\,B^3\,c\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]}{d}+$$

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

$$\frac{1}{b\,d^3}B^2\,n^2\,\left(2\,A\,b^3\,c^3-6\,a\,A\,b^2\,c^2\,d+6\,a^2\,A\,b\,c\,d^2+3\,b^3\,B\,c^3\,n-9\,a\,b^2\,B\,c^2\,d\,n+9\,a^2\,b\,B\,c\,d^2\,n-3\,a^3\,B\,d^3\,n-2\,a^3\,B\,d^3\,n\,\text{Log}[a+b\,x]+2\,b\,B\,c\,\left(b^2\,c^2-3\,a\,b\,c\,d+3\,a^2\,d^2\right)\,n\,\text{Log}[c+d\,x]+2\,b^3\,B\,c^3\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]-6\,a\,b^2\,B\,c^2\,d\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]+6\,a^2\,b\,B\,c\,d^2\,\text{Log}\left[e\,\left(a+b\,x\right)^n\,\left(c+d\,x\right)^{-n}\right]\right)\,\text{PolyLog}\left[2,\,\frac{d\,\left(a+b\,x\right)}{-b\,c+a\,d}\right]-$$

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

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

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

Problem 166: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 376 leaves, 11 steps):

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

Result (type 4, 2998 leaves):

$$\frac{1}{2\,b\,d^2}\left(-12\,a^2\,A\,B^2\,d^2\,n^2-6\,b^2\,B^3\,c^2\,n^3+6\,a\,b\,B^3\,c\,d\,n^3+6\,a^2\,B^3\,d^2\,n^3+2\,a\,A^3\,b\,d^2\,x-3\,A^2\,b^2\,B\,c\,d\,n\,x+\right.$$

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

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

Problem 167: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 186 leaves, 6 steps):

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

Result (type 4, 2513 leaves):

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

$$4 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right]^3 \text{Log}\left[-\frac{d (a+b x)}{b (c+d x)}\right] + 6 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right]^2 \text{Log}\left[-\frac{d (a+b x)}{b (c+d x)}\right]^2 -$$
$$4 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}\left[-\frac{d (a+b x)}{b (c+d x)}\right]^3 + B^3 n^3 \text{Log}\left[-\frac{d (a+b x)}{b (c+d x)}\right]^4 -$$
$$12 A B^2 n^2 \text{Log}[a+b x] \text{Log}[c+d x]^2 + 12 B^3 n^3 \text{Log}[a+b x]^2 \text{Log}[c+d x]^2 +$$
$$12 A B^2 n^2 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x]^2 - 12 B^3 n^3 \text{Log}[a+b x] \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x]^2 -$$
$$8 B^3 n^3 \text{Log}[a+b x] \text{Log}[c+d x]^3 + 8 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x]^3 +$$
$$12 A^2 B n \text{Log}[a+b x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] - 12 A B^2 n^2 \text{Log}[a+b x]^2 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] +$$
$$4 B^3 n^3 \text{Log}[a+b x]^3 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] + 8 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right]^3 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] -$$
$$12 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right]^2 \text{Log}\left[-\frac{d (a+b x)}{b (c+d x)}\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] +$$
$$24 A B^2 n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] -$$
$$24 B^3 n^3 \text{Log}[a+b x]^2 \text{Log}[c+d x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] +$$
$$12 B^3 n^3 \text{Log}[a+b x] \text{Log}[c+d x]^2 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] + 6 B^3 n^3 \text{Log}[a+b x]^2 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]^2 +$$
$$12 B^3 n^3 \text{Log}[a+b x] \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]^2 -$$
$$18 B^3 n^3 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right]^2 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]^2 + 12 A^2 B \text{Log}[a+b x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] -$$
$$12 A B^2 n \text{Log}[a+b x]^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] +$$
$$4 B^3 n^2 \text{Log}[a+b x]^3 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] -$$
$$12 B^3 n^2 \text{Log}[a+b x] \text{Log}[c+d x]^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] +$$
$$12 B^3 n^2 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x]^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] +$$
$$24 A B^2 n \text{Log}[a+b x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] -$$
$$12 B^3 n^2 \text{Log}[a+b x]^2 \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] +$$
$$24 B^3 n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] +$$
$$12 A B^2 \text{Log}[a+b x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2 -$$
$$6 B^3 n \text{Log}[a+b x]^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2 +$$
$$12 B^3 n \text{Log}[a+b x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2 +$$
$$4 B^3 \text{Log}[a+b x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^3 - 4 B^3 n^3 \text{Log}\left[-\frac{d (a+b x)}{b (c+d x)}\right]^3 \text{Log}\left[\frac{b c-a d}{b c+b d x}\right] +$$

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

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

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

Optimal (type 3, 184 leaves, 5 steps):

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

Result (type 3, 524 leaves):

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

Problem 172: Unable to integrate problem.

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

Optimal (type 4, 96 leaves, 4 steps):

$$\left(e^{\frac{A}{B n}} \left(c + d x\right) \left(e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right)^{\frac{1}{n}} \operatorname{ExpIntegralEi}\left[-\frac{A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]}{B n}\right]\right) /$$
$$\left(B \left(b c - a d\right) g^2 n \left(a + b x\right)\right)$$

Result (type 8, 38 leaves):

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

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

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

Optimal (type 4, 503 leaves, 19 steps):

$$\frac{13\,B^2\,(b\,c-a\,d)^4\,g^4\,x}{30\,d^4}-\frac{7\,B^2\,(b\,c-a\,d)^3\,g^4\,(a+b\,x)^2}{60\,b\,d^3}+$$
$$\frac{B^2\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3}{30\,b\,d^2}-\frac{5\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{Log}[a+b\,x]}{6\,b\,d^5}-$$
$$\frac{13\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{Log}\left[\frac{c+d\,x}{a+b\,x}\right]}{30\,b\,d^5}+\frac{B\,(b\,c-a\,d)^3\,g^4\,(a+b\,x)^2\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]\right)}{5\,b\,d^3}-$$
$$\frac{2\,B\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]\right)}{15\,b\,d^2}+\frac{B\,(b\,c-a\,d)\,g^4\,(a+b\,x)^4\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]\right)}{10\,b\,d}-$$
$$\frac{2\,B\,(b\,c-a\,d)^4\,g^4\,(c+d\,x)\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]\right)}{5\,d^5}+\frac{g^4\,(a+b\,x)^5\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]\right)^2}{5\,b}-$$
$$\frac{2\,B\,(b\,c-a\,d)^5\,g^4\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]\right)\text{Log}\left[1-\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}+\frac{2\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}$$

Result (type 4, 2847 leaves):

$$\frac{1}{60\,b\,d^5}\,g^4\left(24\,b^5\,B^2\,c^5-144\,a\,b^4\,B^2\,c^4\,d+360\,a^2\,b^3\,B^2\,c^3\,d^2-480\,a^3\,b^2\,B^2\,c^2\,d^3+336\,a^4\,b\,B^2\,c\,d^4-96\,a^5\,B^2\,d^5-\right.$$
$$24\,A\,b^5\,B\,c^4\,d\,x+26\,b^5\,B^2\,c^4\,d\,x+120\,a\,A\,b^4\,B\,c^3\,d^2\,x-118\,a\,b^4\,B^2\,c^3\,d^2\,x-240\,a^2\,A\,b^3\,B\,c^2\,d^3\,x+$$
$$204\,a^2\,b^3\,B^2\,c^2\,d^3\,x+240\,a^3\,A\,b^2\,B\,c\,d^4\,x-158\,a^3\,b^2\,B^2\,c\,d^4\,x+60\,a^4\,A^2\,b\,d^5\,x-96\,a^4\,A\,b\,B\,d^5\,x+$$
$$46\,a^4\,b\,B^2\,d^5\,x+12\,A\,b^5\,B\,c^3\,d^2\,x^2-7\,b^5\,B^2\,c^3\,d^2\,x^2-60\,a\,A\,b^4\,B\,c^2\,d^3\,x^2+27\,a\,b^4\,B^2\,c^2\,d^3\,x^2+$$
$$120\,a^2\,A\,b^3\,B\,c\,d^4\,x^2-33\,a^2\,b^3\,B^2\,c\,d^4\,x^2+120\,a^3\,A^2\,b^2\,d^5\,x^2-72\,a^3\,A\,b^2\,B\,d^5\,x^2+$$
$$13\,a^3\,b^2\,B^2\,d^5\,x^2-8\,A\,b^5\,B\,c^2\,d^3\,x^3+2\,b^5\,B^2\,c^2\,d^3\,x^3+40\,a\,A\,b^4\,B\,c\,d^4\,x^3-4\,a\,b^4\,B^2\,c\,d^4\,x^3+$$
$$120\,a^2\,A^2\,b^3\,d^5\,x^3-32\,a^2\,A\,b^3\,B\,d^5\,x^3+2\,a^2\,b^3\,B^2\,d^5\,x^3+6\,A\,b^5\,B\,c\,d^4\,x^4+60\,a\,A^2\,b^4\,d^5\,x^4-$$
$$6\,a\,A\,b^4\,B\,d^5\,x^4+12\,A^2\,b^5\,d^5\,x^5+24\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b}+x\right]-120\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]-240\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]+96\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$12\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b}+x\right]^2-24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]+120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{c}{d}+x\right]-$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]-96\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]+$$
$$12\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]^2-60\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2+120\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2-$$
$$120\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2+60\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]^2+12\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[a+b\,x]-$$
$$52\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[a+b\,x]+86\,a^4\,b\,B^2\,c\,d^4\,\text{Log}[a+b\,x]-24\,a^5\,A\,B\,d^5\,\text{Log}[a+b\,x]-$$
$$46\,a^5\,B^2\,d^5\,\text{Log}[a+b\,x]-24\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+24\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-$$
$$24\,a^5\,B^2\,d^5\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+24\,A\,b^5\,B\,c^5\,\text{Log}[c+d\,x]-26\,b^5\,B^2\,c^5\,\text{Log}[c+d\,x]-$$
$$120\,a\,A\,b^4\,B\,c^4\,d\,\text{Log}[c+d\,x]+106\,a\,b^4\,B^2\,c^4\,d\,\text{Log}[c+d\,x]+240\,a^2\,A\,b^3\,B\,c^3\,d^2\,\text{Log}[c+d\,x]-$$
$$152\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[c+d\,x]-240\,a^3\,A\,b^2\,B\,c^2\,d^3\,\text{Log}[c+d\,x]+72\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[c+d\,x]+$$
$$120\,a^4\,A\,b\,B\,c\,d^4\,\text{Log}[c+d\,x]+24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-$$

$$120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]+240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]-$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]+120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]-$$
$$24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]+120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]-$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]-$$
$$120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]-24\,b^5\,B^2\,c^5\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$24\,b^5\,B^2\,c^4\,d\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+120\,a\,b^4\,B^2\,c^3\,d^2\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$240\,a^2\,b^3\,B^2\,c^2\,d^3\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+240\,a^3\,b^2\,B^2\,c\,d^4\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$120\,a^4\,A\,b\,B\,d^5\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-96\,a^4\,b\,B^2\,d^5\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$12\,b^5\,B^2\,c^3\,d^2\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-60\,a\,b^4\,B^2\,c^2\,d^3\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$120\,a^2\,b^3\,B^2\,c\,d^4\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+240\,a^3\,A\,b^2\,B\,d^5\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$72\,a^3\,b^2\,B^2\,d^5\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-8\,b^5\,B^2\,c^2\,d^3\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$40\,a\,b^4\,B^2\,c\,d^4\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+240\,a^2\,A\,b^3\,B\,d^5\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$32\,a^2\,b^3\,B^2\,d^5\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+6\,b^5\,B^2\,c\,d^4\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$120\,a\,A\,b^4\,B\,d^5\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-6\,a\,b^4\,B^2\,d^5\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$24\,A\,b^5\,B\,d^5\,x^5\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-24\,a^5\,B^2\,d^5\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$24\,b^5\,B^2\,c^5\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+60\,a^4\,b\,B^2\,d^5\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+$$
$$120\,a^3\,b^2\,B^2\,d^5\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+120\,a^2\,b^3\,B^2\,d^5\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+$$
$$60\,a\,b^4\,B^2\,d^5\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+12\,b^5\,B^2\,d^5\,x^5\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2-$$

$$24\,b\,B^2\,c\,\left(b^4\,c^4-5\,a\,b^3\,c^3\,d+10\,a^2\,b^2\,c^2\,d^2-10\,a^3\,b\,c\,d^3+5\,a^4\,d^4\right)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$

$$24\,a^5\,B^2\,d^5\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

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

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

Optimal (type 4, 420 leaves, 15 steps):

$$-\frac{5\,B^2\,(b\,c-a\,d)^3\,g^3\,x}{12\,d^3}+\frac{B^2\,(b\,c-a\,d)^2\,g^3\,(a+b\,x)^2}{12\,b\,d^2}+$$

$$\frac{11\,B^2\,(b\,c-a\,d)^4\,g^3\,\text{Log}[a+b\,x]}{12\,b\,d^4}+\frac{5\,B^2\,(b\,c-a\,d)^4\,g^3\,\text{Log}\left[\frac{c+d\,x}{a+b\,x}\right]}{12\,b\,d^4}-$$

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

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

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

Result (type 4, 2110 leaves):

$$\frac{1}{12\,b\,d^4}$$

$$g^3\Bigg(-6\,b^4\,B^2\,c^4+30\,a\,b^3\,B^2\,c^3\,d-60\,a^2\,b^2\,B^2\,c^2\,d^2+54\,a^3\,b\,B^2\,c\,d^3-18\,a^4\,B^2\,d^4+6\,A\,b^4\,B\,c^3\,d\,x-5\,b^4\,B^2\,c^3$$

$$d\,x-24\,a\,A\,b^3\,B\,c^2\,d^2\,x+17\,a\,b^3\,B^2\,c^2\,d^2\,x+36\,a^2\,A\,b^2\,B\,c\,d^3\,x-19\,a^2\,b^2\,B^2\,c\,d^3\,x+12\,a^3\,A^2\,b\,d^4\,x-$$

$$18\,a^3\,A\,b\,B\,d^4\,x+7\,a^3\,b\,B^2\,d^4\,x-3\,A\,b^4\,B\,c^2\,d^2\,x^2+b^4\,B^2\,c^2\,d^2\,x^2+12\,a\,A\,b^3\,B\,c\,d^3\,x^2-2\,a\,b^3\,B^2\,c\,d^3\,x^2+$$

$$18\,a^2\,A^2\,b^2\,d^4\,x^2-9\,a^2\,A\,b^2\,B\,d^4\,x^2+a^2\,b^2\,B^2\,d^4\,x^2+2\,A\,b^4\,B\,c\,d^3\,x^3+12\,a\,A^2\,b^3\,d^4\,x^3-2\,a\,A\,b^3\,B\,d^4\,x^3+$$

$$3\,A^2\,b^4\,d^4\,x^4-6\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]+24\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]-36\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]+$$

$$18\,a^4\,B^2\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]+3\,a^4\,B^2\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]^2+6\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]-24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{c}{d}+x\right]+$$

$$36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]-18\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]-3\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2+$$

$$12\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{c}{d}+x\right]^2-18\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+12\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]^2-$$

$$3\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[a+b\,x]+10\,a^3\,b\,B^2\,c\,d^3\,\text{Log}[a+b\,x]-6\,a^4\,A\,B\,d^4\,\text{Log}[a+b\,x]-$$

$$7\,a^4\,B^2\,d^4\,\text{Log}[a+b\,x]-6\,a^4\,B^2\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]+6\,a^4\,B^2\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]-$$

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

$$24\,a\,A\,b^3\,B\,c^3\,d\,\text{Log}[c+d\,x]-14\,a\,b^3\,B^2\,c^3\,d\,\text{Log}[c+d\,x]-36\,a^2\,A\,b^2\,B\,c^2\,d^2\,\text{Log}[c+d\,x]+$$

$$9\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[c+d\,x]+24\,a^3\,A\,b\,B\,c\,d^3\,\text{Log}[c+d\,x]-6\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]-36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[c+d\,x]+6\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]-$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[c+d\,x]+6\,b^4\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+6\,b^4\,B^2\,c^3\,d\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$24\,a\,b^3\,B^2\,c^2\,d^2\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+36\,a^2\,b^2\,B^2\,c\,d^3\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$24\,a^3\,A\,b\,B\,d^4\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-18\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$3\,b^4\,B^2\,c^2\,d^2\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+12\,a\,b^3\,B^2\,c\,d^3\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$36\,a^2\,A\,b^2\,B\,d^4\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-9\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$2\,b^4\,B^2\,c\,d^3\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+24\,a\,A\,b^3\,B\,d^4\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$2\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+6\,A\,b^4\,B\,d^4\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-$$
$$6\,a^4\,B^2\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-6\,b^4\,B^2\,c^4\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$24\,a\,b^3\,B^2\,c^3\,d\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]-36\,a^2\,b^2\,B^2\,c^2\,d^2\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+$$
$$24\,a^3\,b\,B^2\,c\,d^3\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]+12\,a^3\,b\,B^2\,d^4\,x\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+$$
$$18\,a^2\,b^2\,B^2\,d^4\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+12\,a\,b^3\,B^2\,d^4\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+$$
$$3\,b^4\,B^2\,d^4\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)}{a+b\,x}\right]^2+6\,b\,B^2\,c\,\left(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\right)$$
$$\text{PolyLog}\left[2,\ \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-6\,a^4\,B^2\,d^4\,\text{PolyLog}\left[2,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

Problem 184: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 335 leaves, 11 steps):

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

Result (type 4, 1398 leaves):

$$\begin{aligned}
&g^2 \left(a^2 A^2 x+a A^2 b x^2+\frac{1}{3} A^2 b^2 x^3+\right.\\
&2 a^2 A B \left(\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}+x \text{Log}\left[\frac{c e+d e x}{a+b x}\right]\right)+\\
&4 a A b B \left(-\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)+\frac{1}{2} x^2 \text{Log}\left[\frac{c e+d e x}{a+b x}\right]\right)+\\
&2 A b^2 B \left(-\left(\left((-b c+a d)\right.\right.\right. (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]+\\
&\left.\left.\left.2 b^3 c^3 \text{Log}[c+d x])\right)\right) / \left(6 b^3 d^3 (b c-a d)\right)\right)+\frac{1}{3} x^3 \text{Log}\left[\frac{c e+d e x}{a+b x}\right]\Bigg)+\\
&a^2 B^2 \left(x \text{Log}\left[\frac{c e+d e x}{a+b x}\right]^2-\frac{1}{b d (b c-a d)}(-b c+a d)\left(a d \text{Log}\left[\frac{a}{b}+x\right]^2+b c \text{Log}\left[\frac{c}{d}+x\right]^2-\right.\right.\\
&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] \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 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{a}{b}+x\right] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]-2 a d \text{Log}[a+b x] \text{Log}\left[\frac{e (c+d x)}{a+b x}\right]+2 b c \text{Log}[c+d x]\\
&\left.\left.\text{Log}\left[\frac{e (c+d x)}{a+b x}\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)\right)+\\
&2 a b B^2 \left(\frac{1}{2} x^2 \text{Log}\left[\frac{c e+d e x}{a+b x}\right]^2+\frac{1}{2 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)-\right.\right.\\
&a^2 d^2 \text{Log}\left[\frac{a}{b}+x\right]^2+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(a^2 d^2 \text{Log}[a+b x]-b (d (-b c+a d) x+b 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{e (c+d x)}{a+b 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)+\\
&\left.\left.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)+
\end{aligned}$$

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

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

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

Optimal (type 4, 202 leaves, 7 steps):

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

Result (type 4, 734 leaves):

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

Problem 186: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 128 leaves, 4 steps):

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

Result (type 4, 454 leaves):

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

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

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

Optimal (type 4, 515 leaves, 19 steps):

$$\frac{26\,B^2\,(b\,c-a\,d)^4\,g^4\,x}{15\,d^4}-\frac{7\,B^2\,(b\,c-a\,d)^3\,g^4\,(a+b\,x)^2}{15\,b\,d^3}+\frac{2\,B^2\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3}{15\,b\,d^2}-\frac{10\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{Log}[a+b\,x]}{3\,b\,d^5}-\frac{26\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{Log}\left[\frac{c+d\,x}{a+b\,x}\right]}{15\,b\,d^5}+\frac{2\,B\,(b\,c-a\,d)^3\,g^4\,(a+b\,x)^2\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]\right)}{5\,b\,d^3}-\frac{4\,B\,(b\,c-a\,d)^2\,g^4\,(a+b\,x)^3\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]\right)}{15\,b\,d^2}+\frac{B\,(b\,c-a\,d)\,g^4\,(a+b\,x)^4\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]\right)}{5\,b\,d}-\frac{4\,B\,(b\,c-a\,d)^4\,g^4\,(c+d\,x)\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]\right)}{5\,d^5}+\frac{g^4\,(a+b\,x)^5\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]\right)^2}{5\,b}-\frac{4\,B\,(b\,c-a\,d)^5\,g^4\left(A+B\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]\right)\text{Log}\left[1-\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}+\frac{8\,B^2\,(b\,c-a\,d)^5\,g^4\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{5\,b\,d^5}$$

Result (type 4, 2907 leaves):

$$\frac{1}{15\,b\,d^5}\,g^4\Big(24\,b^5\,B^2\,c^5-144\,a\,b^4\,B^2\,c^4\,d+360\,a^2\,b^3\,B^2\,c^3\,d^2-480\,a^3\,b^2\,B^2\,c^2\,d^3+336\,a^4\,b\,B^2\,c\,d^4-96\,a^5\,B^2\,d^5-12\,A\,b^5\,B\,c^4\,d\,x+26\,b^5\,B^2\,c^4\,d\,x+60\,a\,A\,b^4\,B\,c^3\,d^2\,x-118\,a\,b^4\,B^2\,c^3\,d^2\,x-120\,a^2\,A\,b^3\,B\,c^2\,d^3\,x+204\,a^2\,b^3\,B^2\,c^2\,d^3\,x+120\,a^3\,A\,b^2\,B\,c\,d^4\,x-158\,a^3\,b^2\,B^2\,c\,d^4\,x+15\,a^4\,A^2\,b\,d^5\,x-48\,a^4\,A\,b\,B\,d^5\,x+46\,a^4\,b\,B^2\,d^5\,x+6\,A\,b^5\,B\,c^3\,d^2\,x^2-7\,b^5\,B^2\,c^3\,d^2\,x^2-30\,a\,A\,b^4\,B\,c^2\,d^3\,x^2+27\,a\,b^4\,B^2\,c^2\,d^3\,x^2+60\,a^2\,A\,b^3\,B\,c\,d^4\,x^2-33\,a^2\,b^3\,B^2\,c\,d^4\,x^2+30\,a^3\,A^2\,b^2\,d^5\,x^2-36\,a^3\,A\,b^2\,B\,d^5\,x^2+13\,a^3\,b^2\,B^2\,d^5\,x^2-4\,A\,b^5\,B\,c^2\,d^3\,x^3+2\,b^5\,B^2\,c^2\,d^3\,x^3+20\,a\,A\,b^4\,B\,c\,d^4\,x^3-4\,a\,b^4\,B^2\,c\,d^4\,x^3+30\,a^2\,A^2\,b^3\,d^5\,x^3-16\,a^2\,A\,b^3\,B\,d^5\,x^3+2\,a^2\,b^3\,B^2\,d^5\,x^3+3\,A\,b^5\,B\,c\,d^4\,x^4+15\,a\,A^2\,b^4\,d^5\,x^4-3\,a\,A\,b^4\,B\,d^5\,x^4+3\,A^2\,b^5\,d^5\,x^5+24\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]-120\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]-240\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big]+96\,a^5\,B^2\,d^5\,\text{Log}\Big[\frac{a}{b}+x\Big]+12\,a^5\,B^2\,d^5\,\text{Log}\Big[\frac{a}{b}+x\Big]^2-24\,b^5\,B^2\,c^5\,\text{Log}\Big[\frac{c}{d}+x\Big]+120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]-240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]-96\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]+12\,b^5\,B^2\,c^5\,\text{Log}\Big[\frac{c}{d}+x\Big]^2-60\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]^2+120\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]^2-120\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]^2+60\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]^2+12\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[a+b\,x]-52\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[a+b\,x]+86\,a^4\,b\,B^2\,c\,d^4\,\text{Log}[a+b\,x]-12\,a^5\,A\,B\,d^5\,\text{Log}[a+b\,x]-46\,a^5\,B^2\,d^5\,\text{Log}[a+b\,x]-24\,a^5\,B^2\,d^5\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[a+b\,x]+24\,a^5\,B^2\,d^5\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[a+b\,x]-24\,a^5\,B^2\,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\,b^5\,B\,c^5\,\text{Log}[c+d\,x]-26\,b^5\,B^2\,c^5\,\text{Log}[c+d\,x]-60\,a\,A\,b^4\,B\,c^4\,d\,\text{Log}[c+d\,x]+106\,a\,b^4\,B^2\,c^4\,d\,\text{Log}[c+d\,x]+120\,a^2\,A\,b^3\,B\,c^3\,d^2\,\text{Log}[c+d\,x]-152\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}[c+d\,x]-120\,a^3\,A\,b^2\,B\,c^2\,d^3\,\text{Log}[c+d\,x]+72\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}[c+d\,x]+60\,a^4\,A\,b\,B\,c\,d^4\,\text{Log}[c+d\,x]+24\,b^5\,B^2\,c^5\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]-120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]+240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]-240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]+120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}[c+d\,x]-24\,b^5\,B^2\,c^5\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]+120\,a\,b^4\,B^2\,c^4\,d\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]-240\,a^2\,b^3\,B^2\,c^3\,d^2\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]+240\,a^3\,b^2\,B^2\,c^2\,d^3\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]-120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\Big[\frac{c}{d}+x\Big]\,\text{Log}[c+d\,x]-24\,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]+120\,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]-240\,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]+240\,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]-120\,a^4\,b\,B^2\,c\,d^4\,\text{Log}\Big[\frac{a}{b}+x\Big]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-12\,b^5\,B^2\,c^4\,d\,x\,\text{Log}\Big[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\Big]+60\,a\,b^4\,B^2\,c^3\,d^2\,x\,\text{Log}\Big[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\Big]-$$

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

$$30\,a^4\,A\,b\,B\,d^5\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-48\,a^4\,b\,B^2\,d^5\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+$$

$$6\,b^5\,B^2\,c^3\,d^2\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-30\,a\,b^4\,B^2\,c^2\,d^3\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+$$

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

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

$$20\,a\,b^4\,B^2\,c\,d^4\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+60\,a^2\,A\,b^3\,B\,d^5\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-$$

$$16\,a^2\,b^3\,B^2\,d^5\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+3\,b^5\,B^2\,c\,d^4\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+$$

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

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

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

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

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

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

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

$$24\,b\,B^2\,c\,\left(b^4\,c^4-5\,a\,b^3\,c^3\,d+10\,a^2\,b^2\,c^2\,d^2-10\,a^3\,b\,c\,d^3+5\,a^4\,d^4\right)\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$

$$24\,a^5\,B^2\,d^5\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\Bigg)$$

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

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

Optimal (type 4, 422 leaves, 15 steps):

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

Result (type 4, 2127 leaves):

$$g^3\left(-\frac{6\,a^4\,B^2}{b}-\frac{2\,b^3\,B^2\,c^4}{d^4}+\frac{10\,a\,b^2\,B^2\,c^3}{d^3}-\frac{20\,a^2\,b\,B^2\,c^2}{d^2}+\frac{18\,a^3\,B^2\,c}{d}+a^3\,A^2\,x-3\,a^3\,A\,B\,x+\right.$$
$$\frac{7}{3}\,a^3\,B^2\,x+\frac{A\,b^3\,B\,c^3\,x}{d^3}-\frac{5\,b^3\,B^2\,c^3\,x}{3\,d^3}-\frac{4\,a\,A\,b^2\,B\,c^2\,x}{d^2}+\frac{17\,a\,b^2\,B^2\,c^2\,x}{3\,d^2}+\frac{6\,a^2\,A\,b\,B\,c\,x}{d}-$$
$$\frac{19\,a^2\,b\,B^2\,c\,x}{3\,d}+\frac{3}{2}\,a^2\,A^2\,b\,x^2-\frac{3}{2}\,a^2\,A\,b\,B\,x^2+\frac{1}{3}\,a^2\,b\,B^2\,x^2-\frac{A\,b^3\,B\,c^2\,x^2}{2\,d^2}+\frac{b^3\,B^2\,c^2\,x^2}{3\,d^2}+$$
$$\frac{2\,a\,A\,b^2\,B\,c\,x^2}{d}-\frac{2\,a\,b^2\,B^2\,c\,x^2}{3\,d}+a\,A^2\,b^2\,x^3-\frac{1}{3}\,a\,A\,b^2\,B\,x^3+\frac{A\,b^3\,B\,c\,x^3}{3\,d}+\frac{1}{4}\,A^2\,b^3\,x^4+$$
$$\frac{6\,a^4\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]}{b}-\frac{2\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]}{d^3}+\frac{8\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]}{d^2}-\frac{12\,a^3\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]}{d}+$$
$$\frac{a^4\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]^2}{b}+\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]}{d^4}-\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]}{d^3}+\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]}{d^2}-$$
$$\frac{6\,a^3\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]}{d}-\frac{b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^4}+\frac{4\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^3}-\frac{6\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d^2}+$$
$$\frac{4\,a^3\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]^2}{d}-\frac{a^4\,A\,B\,\text{Log}[a+b\,x]}{b}-\frac{7\,a^4\,B^2\,\text{Log}[a+b\,x]}{3\,b}-\frac{a^2\,b\,B^2\,c^2\,\text{Log}[a+b\,x]}{d^2}+$$
$$\frac{10\,a^3\,B^2\,c\,\text{Log}[a+b\,x]}{3\,d}-\frac{2\,a^4\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}[a+b\,x]}{b}+\frac{2\,a^4\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}[a+b\,x]}{b}-$$
$$\frac{2\,a^4\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{b}-\frac{A\,b^3\,B\,c^4\,\text{Log}[c+d\,x]}{d^4}+\frac{5\,b^3\,B^2\,c^4\,\text{Log}[c+d\,x]}{3\,d^4}+$$
$$\frac{4\,a\,A\,b^2\,B\,c^3\,\text{Log}[c+d\,x]}{d^3}-\frac{14\,a\,b^2\,B^2\,c^3\,\text{Log}[c+d\,x]}{3\,d^3}-\frac{6\,a^2\,A\,b\,B\,c^2\,\text{Log}[c+d\,x]}{d^2}+$$

$$\frac{3\,a^2\,b\,B^2\,c^2\,\text{Log}[c+d\,x]}{d^2}+\frac{4\,a^3\,A\,B\,c\,\text{Log}[c+d\,x]}{d}-\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^4}+$$
$$\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^3}-\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d^2}+$$
$$\frac{8\,a^3\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]}{d}+\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^4}-$$
$$\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^3}+\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d^2}-$$
$$\frac{8\,a^3\,B^2\,c\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]}{d}+\frac{2\,b^3\,B^2\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^4}-$$
$$\frac{8\,a\,b^2\,B^2\,c^3\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+\frac{12\,a^2\,b\,B^2\,c^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-$$
$$\frac{8\,a^3\,B^2\,c\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}+2\,a^3\,A\,B\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-$$
$$3\,a^3\,B^2\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+\frac{b^3\,B^2\,c^3\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d^3}-\frac{4\,a\,b^2\,B^2\,c^2\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d^2}+$$
$$\frac{6\,a^2\,b\,B^2\,c\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d}+3\,a^2\,A\,b\,B\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-\frac{3}{2}\,a^2\,b\,B^2\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-$$
$$\frac{b^3\,B^2\,c^2\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{2\,d^2}+\frac{2\,a\,b^2\,B^2\,c\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d}+2\,a\,A\,b^2\,B\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-$$
$$\frac{1}{3}\,a\,b^2\,B^2\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]+\frac{b^3\,B^2\,c\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{3\,d}+\frac{1}{2}\,A\,b^3\,B\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]-$$
$$\frac{a^4\,B^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{b}-\frac{b^3\,B^2\,c^4\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d^4}+$$
$$\frac{4\,a\,b^2\,B^2\,c^3\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d^3}-\frac{6\,a^2\,b\,B^2\,c^2\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d^2}+$$
$$\frac{4\,a^3\,B^2\,c\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]}{d}+a^3\,B^2\,x\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]^2+$$
$$\frac{3}{2}\,a^2\,b\,B^2\,x^2\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]^2+a\,b^2\,B^2\,x^3\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]^2+\frac{1}{4}\,b^3\,B^2\,x^4\,\text{Log}\left[\frac{e\,(c+d\,x)^2}{(a+b\,x)^2}\right]^2+$$
$$\left(\frac{2\,B^2\,c\,\left(b^3\,c^3-4\,a\,b^2\,c^2\,d+6\,a^2\,b\,c\,d^2-4\,a^3\,d^3\right)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^4}-\frac{2\,a^4\,B^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b}\right)$$

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

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

Optimal (type 4, 343 leaves, 11 steps):

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

Result (type 4, 1458 leaves):

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

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

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

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

Optimal (type 4, 211 leaves, 7 steps):

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

Result (type 4, 754 leaves) :

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Optimal (type 4, 132 leaves, 4 steps) :

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

Result (type 4, 624 leaves) :

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

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

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

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

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

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

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

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

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

Problem 222: Unable to integrate problem.

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

Optimal (type 4, 91 leaves, 3 steps):

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

Result (type 8, 36 leaves):

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

Problem 223: Unable to integrate problem.

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

Optimal (type 4, 151 leaves, 7 steps):

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

Result (type 8, 36 leaves):

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

Problem 227: Unable to integrate problem.

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

Optimal (type 4, 147 leaves, 4 steps):

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

Result (type 8, 36 leaves):

$$\int \frac{1}{(a g + b g x)^2 \left(A + B \operatorname{Log}\left[\frac{e (c+d x)^2}{(a+b x)^2}\right]\right)^2} dx$$

Problem 228: Unable to integrate problem.

$$\int \frac{1}{(a g + b g x)^3 \left(A + B \operatorname{Log}\left[\frac{e (c+d x)^2}{(a+b x)^2}\right]\right)^2} dx$$

Optimal (type 4, 206 leaves, 10 steps):

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

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

Result (type 8, 36 leaves):

$$\int \frac{1}{(a g + b g x)^3 \left(A + B \operatorname{Log}\left[\frac{e (c+d x)^2}{(a+b x)^2}\right]\right)^2} dx$$

Problem 229: Unable to integrate problem.

$$\int \frac{1}{(a g + b g x)^2 \left(A + B \operatorname{Log}\left[e (a + b x)^n (c + d x)^{-n}\right]\right)} dx$$

Optimal (type 4, 96 leaves, 4 steps):

$$\left(e^{\frac{A}{Bn}} (c + d x) \left(e (a + b x)^n (c + d x)^{-n}\right)^{\frac{1}{n}} \operatorname{ExpIntegralEi}\left[-\frac{A + B \operatorname{Log}\left[e (a + b x)^n (c + d x)^{-n}\right]}{B n}\right]\right) /$$

$$\left(B (b c - a d) g^2 n (a + b x)\right)$$

Result (type 8, 38 leaves):

$$\int \frac{1}{(a g + b g x)^2 \left(A + B \operatorname{Log}\left[e (a + b x)^n (c + d x)^{-n}\right]\right)} dx$$

Problem 240: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 874 leaves, 15 steps):

$$\frac{B^2 (b c-a d)^3 g^3 x}{6 b^3 d^3}+\frac{B^2 (b c-a d)^2 g^2 (4 b d f-3 b c g-a d g) x}{4 b^3 d^3}+\frac{B^2 (b c-a d)^2 g^3 (c+d x)^2}{12 b^2 d^4}+$$
$$\frac{B^2 (b c-a d)^4 g^3 \text{Log}\left[\frac{a+b x}{c+d x}\right]}{6 b^4 d^4}+\frac{B^2 (b c-a d)^3 g^2 (4 b d f-3 b c g-a d g) \text{Log}\left[\frac{a+b x}{c+d x}\right]}{4 b^4 d^4}-\frac{1}{2 b^4 d^3}$$
$$B (b c-a d) g \left(a^2 d^2 g^2-2 a b d g (2 d f-c g)+b^2 \left(6 d^2 f^2-8 c d f g+3 c^2 g^2\right)\right) (a+b x)$$
$$\left(A+B \text{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)-\frac{B (b c-a d) g^2 (4 b d f-3 b c g-a d g) (c+d x)^2 \left(A+B \text{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{4 b^2 d^4}-$$
$$\frac{B (b c-a d) g^3 (c+d x)^3 \left(A+B \text{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)}{6 b d^4}-\frac{1}{2 b^4 d^4} B (b c-a d) (2 b d f-b c g-a d g)$$
$$\left(2 a b d^2 f g-a^2 d^2 g^2-b^2 \left(2 d^2 f^2-2 c d f g+c^2 g^2\right)\right) \text{Log}\left[\frac{b c-a d}{b (c+d x)}\right] \left(A+B \text{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)-$$
$$\frac{(b f-a g)^4 \left(A+B \text{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)^2}{4 b^4 g}+\frac{(f+g x)^4 \left(A+B \text{Log}\left[\frac{e (a+b x)}{c+d x}\right]\right)^2}{4 g}+$$
$$\frac{B^2 (b c-a d)^4 g^3 \text{Log}[c+d x]}{6 b^4 d^4}+\frac{B^2 (b c-a d)^3 g^2 (4 b d f-3 b c g-a d g) \text{Log}[c+d x]}{4 b^4 d^4}+\frac{1}{2 b^4 d^4}$$
$$B^2 (b c-a d)^2 g \left(a^2 d^2 g^2-2 a b d g (2 d f-c g)+b^2 \left(6 d^2 f^2-8 c d f g+3 c^2 g^2\right)\right) \text{Log}[c+d x]-$$
$$\frac{1}{2 b^4 d^4} B^2 (b c-a d) (2 b d f-b c g-a d g)$$
$$\left(2 a b d^2 f g-a^2 d^2 g^2-b^2 \left(2 d^2 f^2-2 c d f g+c^2 g^2\right)\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]$$

Result (type 4, 2229 leaves):

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

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

$$\frac{1}{12}B^2\,g^3\left(3\,x^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]^2+\frac{1}{b^4\,d^4}\left(-6\,b^4\,c^4+6\,a\,b^3\,c^3\,d+6\,a^3\,b\,c\,d^3-6\,a^4\,d^4-5\,b^4\,c^3\,d\,x+\right.\right.$$
$$5\,a\,b^3\,c^2\,d^2\,x+5\,a^2\,b^2\,c\,d^3\,x-5\,a^3\,b\,d^4\,x+b^4\,c^2\,d^2\,x^2-2\,a\,b^3\,c\,d^3\,x^2+a^2\,b^2\,d^4\,x^2-$$
$$6\,a\,b^3\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]+6\,a^4\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]-3\,a^4\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]^2+6\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]-$$
$$6\,a^3\,b\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]-3\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2-3\,a^2\,b^2\,c^2\,d^2\,\text{Log}[a+b\,x]-2\,a^3\,b\,c\,d^3\,\text{Log}[a+b\,x]+$$
$$5\,a^4\,d^4\,\text{Log}[a+b\,x]+6\,a^4\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x]-6\,a^4\,d^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[a+b\,x]+6\,a^4\,d^4$$
$$\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-6\,b^4\,c^3\,d\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+6\,a^3\,b\,d^4\,x\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$$
$$3\,b^4\,c^2\,d^2\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-3\,a^2\,b^2\,d^4\,x^2\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-2\,b^4\,c\,d^3\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+$$
$$2\,a\,b^3\,d^4\,x^3\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]-6\,a^4\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]+5\,b^4\,c^4\,\text{Log}[c+d\,x]-$$
$$2\,a\,b^3\,c^3\,d\,\text{Log}[c+d\,x]-3\,a^2\,b^2\,c^2\,d^2\,\text{Log}[c+d\,x]-6\,b^4\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]+$$
$$6\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]+6\,b^4\,c^4\,\text{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\,\text{Log}[c+d\,x]+6\,b^4\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]$$
$$\left.\left.\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+6\,b^4\,c^4\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+6\,a^4\,d^4\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)\right)+$$

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

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

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

Problem 241: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 532 leaves, 12 steps):

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

Result (type 4, 1294 leaves):

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

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

Problem 242: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 270 leaves, 9 steps):

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

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

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

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

Result (type 4, 745 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Optimal (type 4, 125 leaves, 6 steps):

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

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

Result (type 4, 338 leaves):

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

Problem 244: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 277 leaves, 9 steps):

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

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

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

Result (type 4, 1348 leaves):

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

Problem 245: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 196 leaves, 4 steps):

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

Result (type 4, 3258 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Optimal (type 4, 369 leaves, 9 steps):

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

Result (type 4, 18235 leaves):

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left.\left(\frac{c}{d}+x\right)\right)\Bigg)\operatorname{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]+\left(\frac{\left(-d f+c g\right)\left(\frac{2 c^2 d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^3}-\frac{2 c d\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}\right)}{d g\left(\frac{c}{d}+x\right)}+\right.$$

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

$$\operatorname{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\left(-\operatorname{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]+\operatorname{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)+$$

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

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

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

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

$$\left.\operatorname{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b f-a g\right)\left(\frac{c}{d}+x\right)\right)-$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\left(\left(-b c+a d\right)\left(f+g x\right)\right)\Bigg)\operatorname{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]^2+$$

$$\frac{1}{2 d g\left(\frac{c}{d}+x\right)}\left(-d f+c g\right)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)\operatorname{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]$$

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

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

$$\left(\operatorname{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]-\operatorname{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)-\Bigg(b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)$$

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

$$\left(-\operatorname{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]+\operatorname{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)\Bigg)\Big/\left(d\left(b f-a g\right)\left(\frac{c}{d}+x\right)\right)+\frac{1}{d g\left(\frac{c}{d}+x\right)}$$

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

$$\left(-\operatorname{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]+\operatorname{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)-\Bigg(b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)$$

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

$$\left(\operatorname{Log}\left[\frac{-b c+a d}{b d\left(\frac{a}{b}+x\right)}\right]+\operatorname{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]-\operatorname{Log}\left[-\frac{\left(-b c+a d\right)\left(f+g x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Bigg)\Big/$$

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

$$\left(\operatorname{Log}\left[\frac{c}{d}+x\right]-\operatorname{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\operatorname{Log}\left[1+\frac{b g\left(\frac{a}{b}+x\right)}{b f-a g}\right]-$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Optimal (type 4, 714 leaves, 12 steps):

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

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

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

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

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

$$\left(2\,B\,(b\,c-a\,d)\,\left(a^2\,d^2\,g^2-a\,b\,d\,g\,(3\,d\,f-c\,g)+b^2\,\left(3\,d^2\,f^2-3\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

$$\left.\left(A + B \operatorname{Log}\left[\frac{e\,(a+b\,x)}{c+d\,x}\right]\right)\operatorname{Log}\left[1-\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]\right) \Big/ \left(3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^3\right) +$$

$$\left(2\,B^2\,(b\,c-a\,d)\,\left(a^2\,d^2\,g^2-a\,b\,d\,g\,(3\,d\,f-c\,g)+b^2\,\left(3\,d^2\,f^2-3\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

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

Result (type 4, 55 110 leaves): Display of huge result suppressed!

Problem 248: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 1159 leaves, 15 steps):

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

Result (type 4, 142 893 leaves) : Display of huge result suppressed!

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

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

Optimal (type 4, 869 leaves, 15 steps) :

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

Result (type 4, 2279 leaves) :

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

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

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

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

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

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

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

$$\frac{1}{12\,b^4\,d^4}\,B^2\,g^3\left(-24\,b^4\,c^4+24\,a\,b^3\,c^3\,d+24\,a^3\,b\,c\,d^3-24\,a^4\,d^4-20\,b^4\,c^3\,d\,x+20\,a\,b^3\,c^2\,d^2\,x+\right.$$

$$20\,a^2\,b^2\,c\,d^3\,x-20\,a^3\,b\,d^4\,x+4\,b^4\,c^2\,d^2\,x^2-8\,a\,b^3\,c\,d^3\,x^2+4\,a^2\,b^2\,d^4\,x^2-$$

$$24\,a\,b^3\,c^3\,d\,\text{Log}\left[\frac{a}{b}+x\right]+24\,a^4\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]-12\,a^4\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]^2+24\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]-$$

$$24\,a^3\,b\,c\,d^3\,\text{Log}\left[\frac{c}{d}+x\right]-12\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]^2-12\,a^2\,b^2\,c^2\,d^2\,\text{Log}[a+b\,x]-$$

$$8\,a^3\,b\,c\,d^3\,\text{Log}[a+b\,x]+20\,a^4\,d^4\,\text{Log}[a+b\,x]+24\,a^4\,d^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[a+b\,x]-$$

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

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

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

$$12\,a^4\,d^4\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]+3\,b^4\,d^4\,x^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]^2+20\,b^4\,c^4\,\text{Log}[c+d\,x]-$$

$$8\,a\,b^3\,c^3\,d\,\text{Log}[c+d\,x]-12\,a^2\,b^2\,c^2\,d^2\,\text{Log}[c+d\,x]-24\,b^4\,c^4\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}[c+d\,x]+$$

$$24\,b^4\,c^4\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}[c+d\,x]+12\,b^4\,c^4\,\text{Log}\left[\frac{e\,\left(a+b\,x\right)^2}{\left(c+d\,x\right)^2}\right]\,\text{Log}[c+d\,x]+$$

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

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

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

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

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

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

Optimal (type 4, 542 leaves, 12 steps):

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

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

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

$$4 B (b c-a d)\left(a^2 d^2 g^2-a b d g (3 d f-c g)+b^2\left(3 d^2 f^2-3 c d f g+c^2 g^2\right)\right)$$

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

$$\frac{4 B^2 (b c-a d)^3 g^2 \operatorname{Log}[c+d x]}{3 b^3 d^3}+\frac{8 B^2 (b c-a d)^2 g (3 b d f-2 b c g-a d g) \operatorname{Log}[c+d x]}{3 b^3 d^3}+\frac{1}{3 b^3 d^3}$$

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

Result (type 4, 1323 leaves):

$$\frac{1}{3}$$

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

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

$$\left.x^3 \operatorname{Log}\left[\frac{e (a+b x)^2}{(c+d x)^2}\right]-\frac{2 c^3 \operatorname{Log}[c+d x]}{d^3}\right)+\frac{1}{b^2 d^2} 6 A B f g$$

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

$$\frac{1}{b d} 3 B^2 f^2\left(4 a d \operatorname{Log}\left[\frac{a}{b}+x\right]^2+4 b c \operatorname{Log}\left[\frac{c}{d}+x\right]^2-8 a d \operatorname{Log}\left[\frac{a}{b}+x\right] \operatorname{Log}[a+b x]+\right.$$

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

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

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

$$\left.\operatorname{Log}\left[\frac{b (c+d x)}{b c-a d}\right]-8 b c \operatorname{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right]-8 a d \operatorname{PolyLog}\left[2, \frac{b (c+d x)}{b c-a d}\right]\right)+$$

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

Problem 274: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 281 leaves, 9 steps):

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

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

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

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

Result (type 4, 767 leaves):

$$\frac{1}{2\,b^2\,d^2}\left(2\,A^2\,b^2\,d^2\,f\,x+A^2\,b^2\,d^2\,g\,x^2+\right.$$

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

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

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

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

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

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

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

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

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

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

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

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

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

Problem 275: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 129 leaves, 6 steps):

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

Result (type 4, 385 leaves):

$$\frac{1}{b\,d}\left(A^2\,b\,d\,x + 4\,a\,B^2\,d\operatorname{Log}\left[\frac{a}{b}+x\right]^2 + 4\,b\,B^2\,c\operatorname{Log}\left[\frac{c}{d}+x\right]^2 + 4\,a\,A\,B\,d\operatorname{Log}[a+b\,x] - 8\,a\,B^2\,d\operatorname{Log}\left[\frac{a}{b}+x\right]\operatorname{Log}[a+b\,x] + 8\,a\,B^2\,d\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}[a+b\,x] - 8\,a\,B^2\,d\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] + 2\,A\,b\,B\,d\,x\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right] + 4\,a\,B^2\,d\operatorname{Log}[a+b\,x]\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right] + b\,B^2\,d\,x\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]^2 - 4\,A\,b\,B\,c\operatorname{Log}[c+d\,x] + 8\,b\,B^2\,c\operatorname{Log}\left[\frac{a}{b}+x\right]\operatorname{Log}[c+d\,x] - 8\,b\,B^2\,c\operatorname{Log}\left[\frac{c}{d}+x\right]\operatorname{Log}[c+d\,x] - 4\,b\,B^2\,c\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\operatorname{Log}[c+d\,x] - 8\,b\,B^2\,c\operatorname{Log}\left[\frac{a}{b}+x\right]\operatorname{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right] - 8\,b\,B^2\,c\operatorname{PolyLog}\left[2,\ \frac{d\,(a+b\,x)}{-b\,c+a\,d}\right] - 8\,a\,B^2\,d\operatorname{PolyLog}\left[2,\ \frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)$$

Problem 276: Result more than twice size of optimal antiderivative.

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

Optimal (type 4, 285 leaves, 9 steps):

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

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

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

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

Result (type 4, 1370 leaves):

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

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

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

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

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

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

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

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

$$8\,B^2\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-$$

$$4\,B^2\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]^2\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-4\,A\,B\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+$$

$$8\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-4\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]^2\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$4\,B^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$8\,B^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+4\,B^2\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]^2\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$8\,B^2\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+$$

$$4\,B^2\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]^2\,\text{Log}\left[\frac{(-b\,c+a\,d)\,(f+g\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+$$
$$4\,B\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+2\,B\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\right)\text{PolyLog}\left[2,\,\frac{g\,(a+b\,x)}{-b\,f+a\,g}\right]-$$
$$4\,B\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+2\,B\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\right)\text{PolyLog}\left[2,\,\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]-$$
$$8\,B^2\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+$$
$$8\,B^2\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\text{PolyLog}\left[2,\,\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+$$
$$8\,B^2\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]-8\,B^2\,\text{PolyLog}\left[3,\,\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]\Bigg)$$

Problem 277: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{(f+g\,x)^2}\,dx$$

Optimal (type 4, 200 leaves, 4 steps):

$$\frac{(a+b\,x)\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{(b\,f-a\,g)\,(f+g\,x)}+\frac{4\,B\,(b\,c-a\,d)\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\text{Log}\left[1-\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]}{(b\,f-a\,g)\,(d\,f-c\,g)}+$$
$$\frac{8\,B^2\,(b\,c-a\,d)\,\text{PolyLog}\left[2,\,\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]}{(b\,f-a\,g)\,(d\,f-c\,g)}$$

Result (type 4, 3314 leaves):

$$\frac{1}{g\,(-b\,f+a\,g)\,(-d\,f+c\,g)\,(f+g\,x)}$$
$$\Bigg(-A^2\,b\,d\,f^2+A^2\,b\,c\,f\,g+a\,A^2\,d\,f\,g-a\,A^2\,c\,g^2+4\,A\,b\,B\,d\,f^2\,\text{Log}\left[\frac{a}{b}+x\right]-4\,A\,b\,B\,c\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]+$$
$$4\,A\,b\,B\,d\,f\,g\,x\,\text{Log}\left[\frac{a}{b}+x\right]-4\,A\,b\,B\,c\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]-4\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{a}{b}+x\right]^2+$$
$$4\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]^2-4\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{a}{b}+x\right]^2+4\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]^2-$$
$$4\,A\,b\,B\,d\,f^2\,\text{Log}\left[\frac{c}{d}+x\right]+4\,a\,A\,B\,d\,f\,g\,\text{Log}\left[\frac{c}{d}+x\right]-4\,A\,b\,B\,d\,f\,g\,x\,\text{Log}\left[\frac{c}{d}+x\right]+$$
$$4\,a\,A\,B\,d\,g^2\,x\,\text{Log}\left[\frac{c}{d}+x\right]+8\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]-8\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]+$$
$$8\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]-8\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]-4\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{c}{d}+x\right]^2+$$
$$4\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{c}{d}+x\right]^2-4\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{c}{d}+x\right]^2+4\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{c}{d}+x\right]^2-$$

$$2\,A\,b\,B\,d\,f^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+2\,A\,b\,B\,c\,f\,g\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+2\,a\,A\,B\,d\,f\,g\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-$$

$$2\,a\,A\,B\,c\,g^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+4\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-$$

$$4\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+4\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-$$

$$4\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-4\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+$$

$$4\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-4\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]+$$

$$4\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{c}{d}+x\right]\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]-b\,B^2\,d\,f^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]^2+$$

$$b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]^2+a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]^2-a\,B^2\,c\,g^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]^2-$$

$$8\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]+8\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]-$$

$$8\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]+8\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]+$$

$$4\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]^2-4\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]^2+4\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]^2-$$

$$4\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]^2-8\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+$$

$$8\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]-$$

$$8\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+$$

$$8\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]-$$

$$8\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+$$

$$8\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]-$$

$$8\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+$$

$$8\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]+4\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]^2-$$

$$4\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]^2+4\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]^2-$$

$$4\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{(b\,f-a\,g)\,(c+d\,x)}{(d\,f-c\,g)\,(a+b\,x)}\right]^2-4\,A\,b\,B\,d\,f^2\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+$$

$$4\,A\,b\,B\,c\,f\,g\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-4\,A\,b\,B\,d\,f\,g\,x\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+4\,A\,b\,B\,c\,g^2\,x\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+$$

$$8\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-8\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+$$

$$8\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-8\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-$$

$$4\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+4\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-$$

$$4\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+4\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-$$

$$8\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+8\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-$$

$$8\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+8\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+$$

$$4\,A\,b\,B\,d\,f^2\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-4\,a\,A\,B\,d\,f\,g\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+4\,A\,b\,B\,d\,f\,g\,x\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$4\,a\,A\,B\,d\,g^2\,x\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-8\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+$$

$$8\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-8\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+$$

$$8\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{a}{b}+x\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+4\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$4\,a\,B^2\,d\,f\,g\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+4\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$4\,a\,B^2\,d\,g^2\,x\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+8\,b\,B^2\,d\,f^2\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$8\,b\,B^2\,c\,f\,g\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+8\,b\,B^2\,d\,f\,g\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]-$$

$$8\,b\,B^2\,c\,g^2\,x\,\text{Log}\left[\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]\,\text{Log}\left[\frac{d\,(f+g\,x)}{d\,f-c\,g}\right]+8\,B^2\,(b\,c-a\,d)\,g\,(f+g\,x)$$

$$\text{PolyLog}\left[2,\,\frac{g\,(a+b\,x)}{-b\,f+a\,g}\right]-8\,B^2\,(b\,c-a\,d)\,g\,(f+g\,x)\,\text{PolyLog}\left[2,\,\frac{g\,(c+d\,x)}{-d\,f+c\,g}\right]-$$

$$8\,b\,B^2\,c\,f\,g\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+8\,a\,B^2\,d\,f\,g\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]-$$

$$8\,b\,B^2\,c\,g^2\,x\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+8\,a\,B^2\,d\,g^2\,x\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]\Bigg)$$

Problem 278: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{(f+g\,x)^3}\,dx$$

Optimal (type 4, 381 leaves, 9 steps):

$$\frac{2\,B\,(b\,c-a\,d)\,g\,(a+b\,x)\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{(b\,f-a\,g)^2\,(d\,f-c\,g)\,(f+g\,x)}+$$

$$\frac{b^2\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{2\,g\,(b\,f-a\,g)^2}-\frac{\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{2\,g\,(f+g\,x)^2}+\frac{4\,B^2\,(b\,c-a\,d)^2\,g\,\text{Log}\left[\frac{f+g\,x}{c+d\,x}\right]}{(b\,f-a\,g)^2\,(d\,f-c\,g)^2}+$$

$$\left(2\,B\,(b\,c-a\,d)\,(2\,b\,d\,f-b\,c\,g-a\,d\,g)\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\text{Log}\left[1-\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]\right)\Big/$$

$$\left((b\,f-a\,g)^2\,(d\,f-c\,g)^2\right)+\frac{4\,B^2\,(b\,c-a\,d)\,(2\,b\,d\,f-b\,c\,g-a\,d\,g)\,\text{PolyLog}\left[2,\,\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]}{(b\,f-a\,g)^2\,(d\,f-c\,g)^2}$$

Result (type 4, 18290 leaves):

$$-\frac{A^2}{2\,g\,(f+g\,x)^2}+2\,A\,B$$

$$\left(\frac{1}{g}\left(\frac{g\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a\,g}{b}\right)^3\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right)}-\left(\frac{g^2\left(\frac{a}{b}+x\right)^2}{\left(-f+\frac{a\,g}{b}\right)^4\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right)^2}+\frac{2\,g\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a\,g}{b}\right)^3\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right)}\right)\text{Log}\left[\frac{a}{b}+x\right]-\right.\right.$$

$$\left.\left.\frac{\text{Log}\left[1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a\,g}{b}}\right]}{\left(-f+\frac{a\,g}{b}\right)^2}\right)-\frac{1}{g}\left(\frac{g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c\,g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right)}-\right.\right.$$

$$\left.\left.\left(\frac{g^2\left(\frac{c}{d}+x\right)^2}{\left(-f+\frac{c\,g}{d}\right)^4\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right)^2}+\frac{2\,g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c\,g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right)}\right)\text{Log}\left[\frac{c}{d}+x\right]-\frac{\text{Log}\left[1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c\,g}{d}}\right]}{\left(-f+\frac{c\,g}{d}\right)^2}\right)-\right.$$

$$\left.\frac{-2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a^2\,e}{(c+d\,x)^2}+\frac{2\,a\,b\,e\,x}{(c+d\,x)^2}+\frac{b^2\,e\,x^2}{(c+d\,x)^2}\right]}{2\,g\,(f+g\,x)^2}\right)+$$

$$B^2\left(2\left(\frac{1}{g}\left(\frac{g\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a g}{b}\right)^3\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right)}-\left(\frac{g^2\left(\frac{a}{b}+x\right)^2}{\left(-f+\frac{a g}{b}\right)^4\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right)^2}+\frac{2 g\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a g}{b}\right)^3\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right)}\right)\right.\right.$$

$$\left.\left.\text{Log}\left[\frac{a}{b}+x\right]-\frac{\text{Log}\left[1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right]}{\left(-f+\frac{a g}{b}\right)^2}\right)-\frac{1}{g}\left(\frac{g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right)}-\right.\right.$$

$$\left.\left.\left(\frac{g^2\left(\frac{c}{d}+x\right)^2}{\left(-f+\frac{c g}{d}\right)^4\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right)^2}+\frac{2 g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right)}\right)\text{Log}\left[\frac{c}{d}+x\right]-\frac{\text{Log}\left[1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right]}{\left(-f+\frac{c g}{d}\right)^2}\right)\right)$$

$$\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a^2 e}{(c+d x)^2}+\frac{2 a b e x}{(c+d x)^2}+\frac{b^2 e x^2}{(c+d x)^2}\right]\right)-$$

$$\frac{\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+2\,\text{Log}\left[\frac{c}{d}+x\right]+\text{Log}\left[\frac{a^2 e}{(c+d x)^2}+\frac{2 a b e x}{(c+d x)^2}+\frac{b^2 e x^2}{(c+d x)^2}\right]\right)^2}{2 g (f+g x)^2}+\frac{1}{g}$$

$$4\left(-\frac{1}{2}\left(\frac{g^2\left(\frac{a}{b}+x\right)^2}{\left(-f+\frac{a g}{b}\right)^4\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right)^2}+\frac{2 g\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a g}{b}\right)^3\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right)}\right)\text{Log}\left[\frac{a}{b}+x\right]^2+\frac{\text{Log}\left[1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right]}{\left(-f+\frac{a g}{b}\right)^2}+\right.$$

$$\left.\text{Log}\left[\frac{a}{b}+x\right]\left(\frac{g\left(\frac{a}{b}+x\right)}{\left(-f+\frac{a g}{b}\right)^3\left(1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right)}-\frac{\text{Log}\left[1-\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right]}{\left(-f+\frac{a g}{b}\right)^2}\right)-\frac{\text{PolyLog}\left[2,\frac{g\left(\frac{a}{b}+x\right)}{-f+\frac{a g}{b}}\right]}{\left(-f+\frac{a g}{b}\right)^2}\right)+\frac{1}{g}$$

$$4\left(-\frac{1}{2}\left(\frac{g^2\left(\frac{c}{d}+x\right)^2}{\left(-f+\frac{c g}{d}\right)^4\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right)^2}+\frac{2 g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right)}\right)\text{Log}\left[\frac{c}{d}+x\right]^2+\frac{\text{Log}\left[1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right]}{\left(-f+\frac{c g}{d}\right)^2}+\right.$$

$$\left.\text{Log}\left[\frac{c}{d}+x\right]\left(\frac{g\left(\frac{c}{d}+x\right)}{\left(-f+\frac{c g}{d}\right)^3\left(1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right)}-\frac{\text{Log}\left[1-\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right]}{\left(-f+\frac{c g}{d}\right)^2}\right)-\frac{\text{PolyLog}\left[2,\frac{g\left(\frac{c}{d}+x\right)}{-f+\frac{c g}{d}}\right]}{\left(-f+\frac{c g}{d}\right)^2}\right)-$$

$$\frac{1}{f^2}4\left(\frac{1}{g}2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{b(f+g x)}{b f-a g}\right]+\frac{1}{2}\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\right.\right.\right.$$

$$\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\left(\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)+\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]$$

$$\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\left(-\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)+$$

$$\frac{1}{2}\,\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]^2\left(\text{Log}\left[\frac{-b\,c+a\,d}{b\,d\,\left(\frac{a}{b}+x\right)}\right]+\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{(-b\,c+a\,d)\,(f+g\,x)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)+\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)$$

$$\text{PolyLog}\left[2,\,-\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]+\left(\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)$$

$$\text{PolyLog}\left[2,\,\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]+\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\left(\text{PolyLog}\left[2,\,\frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]-\text{PolyLog}\left[2,\,-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)-\text{PolyLog}\left[3,\,-\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-$$

$$\text{PolyLog}\left[3,\,\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-\text{PolyLog}\left[3,\,\frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]+\text{PolyLog}\left[3,\,-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]+$$

$$g^2\left(\frac{1}{g}\left(\left(\frac{(b\,f-a\,g)\,\left(\frac{2\,a\,b\,x}{(b\,f-a\,g)^2}+\frac{2\,a^2\,b\,(f+g\,x)}{(b\,f-a\,g)^3}\right)}{b\,(f+g\,x)}-\frac{(b\,f-a\,g)\,x\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)^2}-\frac{a\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}\right)\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]-\left(2\,b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}+\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\left(-\frac{(-b\,c+a\,d)\,x}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}+\frac{c\,(-b\,c+a\,d)\,(f+g\,x)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}\right)\right)\Big/\left((-b\,c+a\,d)\right)\right.\right.\right.$$

$$\left(f+g\,x\right)\Big)\Bigg)\,\text{Log}\Big[-\frac{d\,\left(b\,f-a\,g\right)\,\left(\frac{c}{d}+x\right)}{b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)}\Big]\Bigg)\Big/\left(d\,\left(b\,f-a\,g\right)\,\left(\frac{c}{d}+x\right)\right)+$$

$$\Bigg(-\frac{\left(b\,f-a\,g\right)\,\left(\frac{2\,a\,b\,x}{\left(b\,f-a\,g\right)^2}+\frac{2\,a^2\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^3}\right)}{b\,\left(f+g\,x\right)}+\frac{\left(b\,f-a\,g\right)\,x\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^2}\right)}{b\,\left(f+g\,x\right)^2}+$$

$$\frac{a\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^2}\right)}{b\,\left(f+g\,x\right)}-\frac{\left(-d\,f+c\,g\right)\,\left(\frac{2\,c\,d\,x}{\left(-d\,f+c\,g\right)^2}-\frac{2\,c^2\,d\,\left(f+g\,x\right)}{\left(-d\,f+c\,g\right)^3}\right)}{d\,\left(f+g\,x\right)}+$$

$$\frac{\left(-d\,f+c\,g\right)\,x\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,\left(f+g\,x\right)}{\left(-d\,f+c\,g\right)^2}\right)}{d\,\left(f+g\,x\right)^2}-\frac{c\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,\left(f+g\,x\right)}{\left(-d\,f+c\,g\right)^2}\right)}{d\,\left(f+g\,x\right)}\Bigg)\,\text{Log}\Big[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\Big]$$

$$\text{Log}\Big[-\frac{d\,\left(b\,f-a\,g\right)\,\left(\frac{c}{d}+x\right)}{b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)}\Big]+\frac{1}{2}\Bigg(\frac{\left(b\,f-a\,g\right)\,\left(\frac{2\,a\,b\,x}{\left(b\,f-a\,g\right)^2}+\frac{2\,a^2\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^3}\right)}{b\,\left(f+g\,x\right)}-$$

$$\frac{\left(b\,f-a\,g\right)\,x\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^2}\right)}{b\,\left(f+g\,x\right)^2}-\frac{a\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^2}\right)}{b\,\left(f+g\,x\right)}+$$

$$\Bigg(b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)\,\left(\frac{2\,c\,\left(-b\,c+a\,d\right)\,x}{b\,\left(-d\,f+c\,g\right)^2\,\left(\frac{a}{b}+x\right)}-\frac{2\,c^2\,\left(-b\,c+a\,d\right)\,\left(f+g\,x\right)}{b\,\left(-d\,f+c\,g\right)^3\,\left(\frac{a}{b}+x\right)}\right)\Bigg)\Big/$$

$$\Big(\left(-b\,c+a\,d\right)\,\left(f+g\,x\right)\Big)-\Bigg(b\,\left(-d\,f+c\,g\right)\,x\,\left(\frac{a}{b}+x\right)\,\Bigg(-\frac{\left(-b\,c+a\,d\right)\,x}{b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)}+$$

$$\frac{c\,\left(-b\,c+a\,d\right)\,\left(f+g\,x\right)}{b\,\left(-d\,f+c\,g\right)^2\,\left(\frac{a}{b}+x\right)}\Bigg)\Bigg)\Big/\Big(\left(-b\,c+a\,d\right)\,\left(f+g\,x\right)^2\Big)+$$

$$\frac{b\,c\,\left(\frac{a}{b}+x\right)\,\left(-\frac{\left(-b\,c+a\,d\right)\,x}{b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)}+\frac{c\,\left(-b\,c+a\,d\right)\,\left(f+g\,x\right)}{b\,\left(-d\,f+c\,g\right)^2\,\left(\frac{a}{b}+x\right)}\right)}{\left(-b\,c+a\,d\right)\,\left(f+g\,x\right)}\Bigg)\,\text{Log}\Big[-\frac{d\,\left(b\,f-a\,g\right)\,\left(\frac{c}{d}+x\right)}{b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)}\Big]^2+$$

$$2\,\Bigg(-\frac{\left(b\,f-a\,g\right)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,\left(f+g\,x\right)}{\left(b\,f-a\,g\right)^2}\right)}{b\,\left(f+g\,x\right)}-\frac{\left(-d\,f+c\,g\right)\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,\left(f+g\,x\right)}{\left(-d\,f+c\,g\right)^2}\right)}{d\,\left(f+g\,x\right)}\Bigg)$$

$$\Bigg(-\Bigg(\Bigg(b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)\,\left(\frac{c\,d\,\left(b\,f-a\,g\right)\,\left(\frac{c}{d}+x\right)}{b\,\left(-d\,f+c\,g\right)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,\left(-d\,f+c\,g\right)\,\left(\frac{a}{b}+x\right)}\right)$$

$$\text{Log}\Big[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\Big]\Bigg)\Big/\left(d\,\left(b\,f-a\,g\right)\,\left(\frac{c}{d}+x\right)\right)\Bigg)+\frac{1}{d\,g\,\left(\frac{c}{d}+x\right)}$$

$$\left(-d f+c g\right)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right) \text{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\Bigg)+$$

$$\frac{1}{d g\left(\frac{c}{d}+x\right)}\left(-d f+c g\right)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)$$

$$\left(\left(\frac{\left(b f-a g\right)\left(\frac{b x}{b f-a g}+\frac{a b (f+g x)}{(b f-a g)^2}\right)}{b\left(f+g x\right)}+\frac{\left(-d f+c g\right)\left(-\frac{d x}{-d f+c g}+\frac{c d (f+g x)}{(-d f+c g)^2}\right)}{d\left(f+g x\right)}\right)\right.$$

$$\left(-2 \text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\right)+\frac{1}{d g\left(\frac{c}{d}+x\right)}\left(-d f+c g\right)$$

$$\left.\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)\left(\text{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]-\text{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)\right)+$$

$$\frac{1}{2}\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\left(\frac{1}{d g\left(\frac{c}{d}+x\right)}2\left(-d f+c g\right)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)\right.$$

$$\left(\frac{\left(b f-a g\right)\left(\frac{b x}{b f-a g}+\frac{a b (f+g x)}{(b f-a g)^2}\right)}{b\left(f+g x\right)}+\frac{\left(-d f+c g\right)\left(-\frac{d x}{-d f+c g}+\frac{c d (f+g x)}{(-d f+c g)^2}\right)}{d\left(f+g x\right)}\right)+$$

$$\left(\frac{\left(b f-a g\right)\left(\frac{2 a b x}{(b f-a g)^2}+\frac{2 a^2 b (f+g x)}{(b f-a g)^3}\right)}{b\left(f+g x\right)}-\frac{\left(b f-a g\right) x\left(\frac{b x}{b f-a g}+\frac{a b (f+g x)}{(b f-a g)^2}\right)}{b\left(f+g x\right)^2}-\right.$$

$$\frac{a\left(\frac{b x}{b f-a g}+\frac{a b (f+g x)}{(b f-a g)^2}\right)}{b\left(f+g x\right)}+\frac{\left(-d f+c g\right)\left(\frac{2 c d x}{(-d f+c g)^2}-\frac{2 c^2 d (f+g x)}{(-d f+c g)^3}\right)}{d\left(f+g x\right)}-$$

$$\left.\frac{\left(-d f+c g\right) x\left(-\frac{d x}{-d f+c g}+\frac{c d (f+g x)}{(-d f+c g)^2}\right)}{d\left(f+g x\right)^2}+\frac{c\left(-\frac{d x}{-d f+c g}+\frac{c d (f+g x)}{(-d f+c g)^2}\right)}{d\left(f+g x\right)}\right)$$

$$\left(-2 \text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\right)+\left(\frac{\left(-d f+c g\right)\left(\frac{2 c^2 d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^3}-\frac{2 c d\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}\right)}{d g\left(\frac{c}{d}+x\right)}+\right.$$

$$\left.\left.\frac{c\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)}{d g\left(\frac{c}{d}+x\right)}-\frac{\left(-d f+c g\right)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{(-d f+c g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)}{d g^2\left(\frac{c}{d}+x\right)}\right)\right)$$

$$\left(\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)+$$

$$\frac{1}{2}\left(\frac{\left(-d\,f+c\,g\right)\left(\frac{2\,c^2\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^3}-\frac{2\,c\,d\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}\right)}{d\,g\left(\frac{c}{d}+x\right)}+\frac{c\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)}{d\,g\left(\frac{c}{d}+x\right)}-\right.$$

$$\left.\frac{\left(-d\,f+c\,g\right)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)}{d\,g^2\left(\frac{c}{d}+x\right)}\right)\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\right.$$

$$\left.\text{Log}\left[\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)\left(\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)+$$

$$\left(-\left(\left(\left(2\,b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right)\Big/\left(d^2\,g\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)^2\right)\right)+$$

$$\left(-\left(\left(\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^3\left(\frac{a}{b}+x\right)}-\right.\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\left.\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}\right)\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)\right)-\right.$$

$$\frac{b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)}{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}-\left(a\,b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\right.$$

$$\left.\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right)\Big/\left(d\left(b\,f-a\,g\right)^2\right.$$

$$\left.\left(\frac{c}{d}+x\right)\right)\text{Log}\left[\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]+\left(\frac{\left(-d\,f+c\,g\right)\left(\frac{2\,c^2\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^3}-\frac{2\,c\,d\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}\right)}{d\,g\left(\frac{c}{d}+x\right)}+\right.$$

$$\frac{c\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)}{d\,g\left(\frac{c}{d}+x\right)}-\frac{\left(-d\,f+c\,g\right)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)}{d\,g^2\left(\frac{c}{d}+x\right)}\Bigg)$$

$$\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\Bigg)\left(-\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]+\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)+$$

$$\frac{1}{2}\left(\left(2\,b^2\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)^2\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)^2\right)\Big/\right.$$

$$\left(d^2\left(b\,f-a\,g\right)^2\left(\frac{c}{d}+x\right)^2\right)-$$

$$\left(2\,b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^3\left(\frac{a}{b}+x\right)}-\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(2\,b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(2\,a\,b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)^2\left(\frac{c}{d}+x\right)\right)\Bigg)$$

$$\left(\text{Log}\left[\frac{-b\,c+a\,d}{b\,d\left(\frac{a}{b}+x\right)}\right]+\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{\left(-b\,c+a\,d\right)\left(f+g\,x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)+$$

$$\frac{\left(b\,f-a\,g\right)^2\left(-\frac{a\,b\,g\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)^2\text{Log}\left[1+\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]}{b^2\,g^2\left(\frac{a}{b}+x\right)^2}+\frac{1}{d\,g\left(\frac{c}{d}+x\right)}2\left(-d\,f+c\,g\right)$$

$$\left(-\frac{a\,b\,g\left(\frac{a}{b}+x\right)}{\left(b\,f-a\,g\right)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[\right.$$

$$1+\frac{b g \left(\frac{a}{b}+x\right)}{b f-a g}\Big]+\left(\text{Log}\Big[\frac{c}{d}+x\Big]-\text{Log}\Big[-\frac{d \left(b f-a g\right) \left(\frac{c}{d}+x\right)}{b \left(-d f+c g\right) \left(\frac{a}{b}+x\right)}\Big]\right) \left(\left(\left(b f-a g\right) \left(-\frac{a b g \left(\frac{a}{b}+x\right)}{\left(b f-a g\right)^2}-\frac{b \left(\frac{a}{b}+x\right)}{b f-a g}\right) \left(\frac{a b g \left(\frac{a}{b}+x\right)}{\left(b f-a g\right)^2}+\frac{b \left(\frac{a}{b}+x\right)}{b f-a g}\right)\right) \Big/ \left(b g \left(\frac{a}{b}+x\right) \left(1+\frac{b g \left(\frac{a}{b}+x\right)}{b f-a g}\right)\right)+\frac{1}{b g \left(\frac{a}{b}+x\right)} \left(b f-a g\right) \left(-\frac{2 a^2 b g \left(\frac{a}{b}+x\right)}{\left(b f-a g\right)^3}-\frac{2 a b \left(\frac{a}{b}+x\right)}{\left(b f-a g\right)^2}\right) \text{Log}\Big[1+\frac{b g \left(\frac{a}{b}+x\right)}{b f-a g}\Big]-\frac{a \left(-\frac{a b g \left(\frac{a}{b}+x\right)}{\left(b f-a g\right)^2}-\frac{b \left(\frac{a}{b}+x\right)}{b f-a g}\right) \text{Log}\Big[1+\frac{b g \left(\frac{a}{b}+x\right)}{b f-a g}\Big]}{b g \left(\frac{a}{b}+x\right)}-\frac{\left(b f-a g\right) \left(-\frac{a b g \left(\frac{a}{b}+x\right)}{\left(b f-a g\right)^2}-\frac{b \left(\frac{a}{b}+x\right)}{b f-a g}\right) \text{Log}\Big[1+\frac{b g \left(\frac{a}{b}+x\right)}{b f-a g}\Big]}{b g^2 \left(\frac{a}{b}+x\right)}\right)+\frac{\left(-d f+c g\right)^2 \left(-\frac{c d g \left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d \left(\frac{c}{d}+x\right)}{-d f+c g}\right)^2 \text{Log}\Big[1-\frac{d g \left(\frac{c}{d}+x\right)}{-d f+c g}\Big]}{d^2 g^2 \left(\frac{c}{d}+x\right)^2}+\left(2 b \left(-d f+c g\right)^2 \left(\frac{a}{b}+x\right) \left(-\frac{c d g \left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d \left(\frac{c}{d}+x\right)}{-d f+c g}\right) \left(\frac{c d \left(b f-a g\right) \left(\frac{c}{d}+x\right)}{b \left(-d f+c g\right)^2 \left(\frac{a}{b}+x\right)}+\frac{a d \left(\frac{c}{d}+x\right)}{b \left(-d f+c g\right) \left(\frac{a}{b}+x\right)}\right) \text{Log}\Big[1-\frac{d g \left(\frac{c}{d}+x\right)}{-d f+c g}\Big]\right) \Big/ \left(d^2 g \left(b f-a g\right) \left(\frac{c}{d}+x\right)^2\right)+\left(\text{Log}\Big[\frac{a}{b}+x\Big]+\text{Log}\Big[-\frac{d \left(b f-a g\right) \left(\frac{c}{d}+x\right)}{b \left(-d f+c g\right) \left(\frac{a}{b}+x\right)}\Big]\right) \left(-\left(\left(\left(-d f+c g\right) \left(\frac{c d g \left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}-\frac{d \left(\frac{c}{d}+x\right)}{-d f+c g}\right) \left(-\frac{c d g \left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d \left(\frac{c}{d}+x\right)}{-d f+c g}\right)\right) \Big/ \left(d g \left(\frac{c}{d}+x\right) \left(1-\frac{d g \left(\frac{c}{d}+x\right)}{-d f+c g}\right)\right)\right)\right)-\frac{1}{d g \left(\frac{c}{d}+x\right)} \left(-d f+c g\right) \left(\frac{2 c^2 d g \left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^3}-\frac{2 c d \left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}\right) \text{Log}\Big[1-\frac{d g \left(\frac{c}{d}+x\right)}{-d f+c g}\Big]-$$

$$\frac{c\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{Log}\left[1-\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]}{d\,g\left(\frac{c}{d}+x\right)}+$$

$$\frac{(-d\,f+c\,g)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{Log}\left[1-\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]}{d\,g^2\left(\frac{c}{d}+x\right)}\Bigg)+$$

$$\left(b^2(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)^2\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)^2\right.$$

$$\left.\text{Log}\left[1+\frac{d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d^2(b\,f-a\,g)^2\right.$$

$$\left.\left(\frac{c}{d}+x\right)^2\right)+\text{Log}\left[-\frac{d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right]$$

$$\left(-\left(\left(\left(b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)\left(-\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}-\frac{a\,d\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)\right)\right)\Big/$$

$$\left.\left.\left(d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)\left(1+\frac{d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)\right)\right)\right)-$$

$$\left(b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^3\left(\frac{a}{b}+x\right)}-\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{Log}\left[1+\frac{d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{Log}\left[1+\frac{d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(a\,b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\text{Log}\left[1+\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\Big/\left(d\,(b\,f-a\,g)^2\left(\frac{c}{d}+x\right)\right)+\frac{1}{b\,g\left(\frac{a}{b}+x\right)}$$

$$(b\,f-a\,g)\left(-\frac{2\,a^2\,b\,g\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^3}-\frac{2\,a\,b\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^2}\right)\text{PolyLog}\left[2,\,-\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-$$

$$\frac{a\left(-\frac{a\,b\,g\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)\text{PolyLog}\left[2,\,-\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]}{b\,g\left(\frac{a}{b}+x\right)}-\frac{1}{b\,g^2\left(\frac{a}{b}+x\right)}$$

$$(b\,f-a\,g)\left(-\frac{a\,b\,g\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)\text{PolyLog}\left[2,\,-\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]+$$

$$\left(\left(b\,(-d\,f+c\,g)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^3\left(\frac{a}{b}+x\right)}-\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}\right)\right)\Big/$$

$$\left(d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)\right)+\frac{b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)}{d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}+$$

$$\left(a\,b\,(-d\,f+c\,g)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\left(\frac{a}{b}+x\right)}\right)\right)\Big/$$

$$\left(d\,(b\,f-a\,g)^2\left(\frac{c}{d}+x\right)\right)\text{PolyLog}\left[2,\,-\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-\frac{1}{d\,g\left(\frac{c}{d}+x\right)}$$

$$(-d\,f+c\,g)\left(\frac{2\,c^2\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^3}-\frac{2\,c\,d\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}\right)\text{PolyLog}\left[2,\,\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-$$

$$\frac{c\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{PolyLog}\left[2,\,\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]}{d\,g\left(\frac{c}{d}+x\right)}+\frac{1}{d\,g^2\left(\frac{c}{d}+x\right)}$$

$$(-d\,f+c\,g)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{PolyLog}\left[2,\,\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]+$$

$$\left(-\left(\left(b\,(-d\,f+c\,g)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^3\left(\frac{a}{b}+x\right)}-\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\left(\frac{a}{b}+x\right)}\right)\right)\Big/\right.$$

$$\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)\Bigg)-\frac{b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)}{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}-$$

$$\left(a\,b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right)\Big/$$

$$\left(d\left(b\,f-a\,g\right)^2\left(\frac{c}{d}+x\right)\right)\Bigg)\,\text{PolyLog}\left[2,\ \frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]+$$

$$\Bigg(-\Bigg(\Bigg(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^3\left(\frac{a}{b}+x\right)}-\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}\right)\Bigg)\Big/$$

$$\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)\Bigg)-\frac{b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)}{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}-$$

$$\left(a\,b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right)\Big/$$

$$\left(d\left(b\,f-a\,g\right)^2\left(\frac{c}{d}+x\right)\right)\Bigg)$$

$$\left(\text{PolyLog}\left[2,\ \frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]-\text{PolyLog}\left[2,\ -\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)-$$

$$\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(-\frac{2\,c^2\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^3\left(\frac{a}{b}+x\right)}-\frac{2\,a\,c\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\ -\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(b\,c\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\ -\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(a\,b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\,-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\,(b\,f-a\,g)^2\,\left(\frac{c}{d}+x\right)\right)\Bigg)-$$

$$\frac{1}{g^2}2\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]}{b\,(f+g\,x)}+\frac{1}{2}\right.$$

$$\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}+\frac{(-d\,f+c\,g)\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,(f+g\,x)}{(-d\,f+c\,g)^2}\right)}{d\,(f+g\,x)}\right)$$

$$\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)+$$

$$\left(-\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}-\frac{(-d\,f+c\,g)\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,(f+g\,x)}{(-d\,f+c\,g)^2}\right)}{d\,(f+g\,x)}\right)\text{Log}\left[\right.$$

$$\left.\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]+\frac{1}{2}\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}+\right.$$

$$\left.\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\left(-\frac{(-b\,c+a\,d)\,x}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}+\frac{c\,\left(-b\,c+a\,d\right)\,(f+g\,x)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}\right)\right)\Big/\right.$$

$$\left.\left((-b\,c+a\,d)\,(f+g\,x)\right)\right)\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]^2+$$

$$\frac{1}{2\,d\,g\,\left(\frac{c}{d}+x\right)}(-d\,f+c\,g)\left(-\frac{c\,d\,g\,\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]$$

$$\left(\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)+\frac{1}{2\,d\,g\,\left(\frac{c}{d}+x\right)}(-d\,f+c\,g)$$

$$\left(-\frac{c\,d\,g\,\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)$$

$$\left(\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)-\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\right.$$

$$\left.\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right.$$

$$\left(-\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]+\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)+$$

$$\frac{1}{d\,g\left(\frac{c}{d}+x\right)}\left(-d\,f+c\,g\right)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]$$

$$\left(-\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]+\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)-\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]$$

$$\left.\left(\text{Log}\left[\frac{-b\,c+a\,d}{b\,d\left(\frac{a}{b}+x\right)}\right]+\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{\left(-b\,c+a\,d\right)\left(f+g\,x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\right)\Big/$$

$$\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)+\frac{1}{b\,g\left(\frac{a}{b}+x\right)}\left(b\,f-a\,g\right)\left(-\frac{a\,b\,g\left(\frac{a}{b}+x\right)}{\left(b\,f-a\,g\right)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\text{Log}\left[1+\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-$$

$$\frac{1}{d\,g\left(\frac{c}{d}+x\right)}\left(-d\,f+c\,g\right)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\left(\text{Log}\left[\frac{a}{b}+x\right]+\right.$$

$$\left.\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\text{Log}\left[1-\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]$$

$$\left.\text{Log}\left[1+\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)+\frac{1}{b\,g\left(\frac{a}{b}+x\right)}$$

$$\left(b\,f-a\,g\right)\left(-\frac{a\,b\,g\left(\frac{a}{b}+x\right)}{\left(b\,f-a\,g\right)^2}-\frac{b\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)\text{PolyLog}\left[2,-\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]+$$

$$\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,-\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]\right)\Big/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-\frac{1}{d\,g\left(\frac{c}{d}+x\right)}$$

$$\left(-d f+c g\right)\left(-\frac{c d g\left(\frac{c}{d}+x\right)}{\left(-d f+c g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d f+c g}\right)\text{PolyLog}\left[2,\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]-$$

$$\left(b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)\left(\frac{c d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a d\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\right)\Big/\left(d\left(b f-a g\right)\left(\frac{c}{d}+x\right)\right)-\left(b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a d\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right)\left(\text{PolyLog}\left[2,\frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]-\right.$$

$$\left.\left.\text{PolyLog}\left[2,-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\right)\Big/\left(d\left(b f-a g\right)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)\left(\frac{c d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a d\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\left(b f-a g\right)\left(\frac{c}{d}+x\right)\right)+$$

$$\frac{1}{g^3}2\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]+\frac{1}{2}\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\right.$$

$$\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\right)\left(\text{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]-\text{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)+$$

$$\text{Log}\left[\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]\text{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]$$

$$\left(-\text{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]+\text{Log}\left[-\frac{d\left(f+g x\right)}{-d f+c g}\right]\right)+\frac{1}{2}\text{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]^2$$

$$\left(\text{Log}\left[\frac{-b c+a d}{b d\left(\frac{a}{b}+x\right)}\right]+\text{Log}\left[\frac{b\left(f+g x\right)}{b f-a g}\right]-\text{Log}\left[-\frac{\left(-b c+a d\right)\left(f+g x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)+$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\text{PolyLog}\left[2,-\frac{b g\left(\frac{a}{b}+x\right)}{b f-a g}\right]+$$

$$\left(\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[-\frac{d\left(b f-a g\right)\left(\frac{c}{d}+x\right)}{b\left(-d f+c g\right)\left(\frac{a}{b}+x\right)}\right]\right)\text{PolyLog}\left[2,\frac{d g\left(\frac{c}{d}+x\right)}{-d f+c g}\right]+$$

$$\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\left(\text{PolyLog}\left[2,\,\frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]-\text{PolyLog}\left[2,\,-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)-\text{PolyLog}\left[3,\,-\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-\text{PolyLog}\left[3,\,\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-\text{PolyLog}\left[3,\,\frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]+\text{PolyLog}\left[3,\,-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\Bigg)+$$

$$4\,g\left(\frac{1}{g}\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]}{b\,(f+g\,x)}+\frac{1}{2}\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}+\frac{(-d\,f+c\,g)\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,(f+g\,x)}{(-d\,f+c\,g)^2}\right)}{d\,(f+g\,x)}\right)\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)+\left(-\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}-\frac{(-d\,f+c\,g)\,\left(-\frac{d\,x}{-d\,f+c\,g}+\frac{c\,d\,(f+g\,x)}{(-d\,f+c\,g)^2}\right)}{d\,(f+g\,x)}\right)\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]+\frac{1}{2}\left(\frac{(b\,f-a\,g)\,\left(\frac{b\,x}{b\,f-a\,g}+\frac{a\,b\,(f+g\,x)}{(b\,f-a\,g)^2}\right)}{b\,(f+g\,x)}+\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\left(-\frac{(-b\,c+a\,d)\,x}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}+\frac{c\,(-b\,c+a\,d)\,(f+g\,x)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}\right)\right)\Big/\left((-b\,c+a\,d)\,(f+g\,x)\right)\right)\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]^2+\frac{1}{2\,d\,g\,\left(\frac{c}{d}+x\right)}(-d\,f+c\,g)\left(-\frac{c\,d\,g\,\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\left(\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)+\frac{1}{2\,d\,g\,\left(\frac{c}{d}+x\right)}(-d\,f+c\,g)\left(-\frac{c\,d\,g\,\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)\left(\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)-\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]$$

$$\left(-\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)\Big/\left(d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)\right)+\frac{1}{d\,g\,\left(\frac{c}{d}+x\right)}$$

$$(-d\,f+c\,g)\left(-\frac{c\,d\,g\,\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]$$

$$\left(-\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]+\text{Log}\left[-\frac{d\,(f+g\,x)}{-d\,f+c\,g}\right]\right)-\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]$$

$$\left.\left(\text{Log}\left[\frac{-b\,c+a\,d}{b\,d\,\left(\frac{a}{b}+x\right)}\right]+\text{Log}\left[\frac{b\,(f+g\,x)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{(-b\,c+a\,d)\,(f+g\,x)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\right)\Big/$$

$$\left(d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)\right)+\frac{1}{b\,g\,\left(\frac{a}{b}+x\right)}(b\,f-a\,g)\left(-\frac{a\,b\,g\,\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^2}-\frac{b\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\text{Log}\left[1+\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-$$

$$\frac{1}{d\,g\,\left(\frac{c}{d}+x\right)}(-d\,f+c\,g)\left(-\frac{c\,d\,g\,\left(\frac{c}{d}+x\right)}{(-d\,f+c\,g)^2}+\frac{d\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\left(\text{Log}\left[\frac{a}{b}+x\right]+\right.$$

$$\left.\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\text{Log}\left[1-\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]$$

$$\left.\text{Log}\left[1+\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\Big/\left(d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)\right)+\frac{1}{b\,g\,\left(\frac{a}{b}+x\right)}$$

$$(b\,f-a\,g)\left(-\frac{a\,b\,g\,\left(\frac{a}{b}+x\right)}{(b\,f-a\,g)^2}-\frac{b\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right)\text{PolyLog}\left[2,-\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]+$$

$$\left(b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)\left(\frac{c\,d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)^2\,\left(\frac{a}{b}+x\right)}+\frac{a\,d\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\text{PolyLog}\left[2, -\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]\Bigg)\Bigg/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-\frac{1}{d\,g\left(\frac{c}{d}+x\right)}$$

$$\left(-d\,f+c\,g\right)\left(-\frac{c\,d\,g\left(\frac{c}{d}+x\right)}{\left(-d\,f+c\,g\right)^2}+\frac{d\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right)\text{PolyLog}\left[2, \frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-$$

$$\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2, \frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)\Bigg/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\right.$$

$$\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\left(\text{PolyLog}\left[2, \frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]-\right.$$

$$\left.\left.\text{PolyLog}\left[2, -\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\right)\Bigg/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)-$$

$$\left(b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)\left(\frac{c\,d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)^2\left(\frac{a}{b}+x\right)}+\frac{a\,d\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2, -\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\Bigg/\left(d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)\right)\Bigg)-$$

$$\frac{1}{g^2}\left(\text{Log}\left[\frac{a}{b}+x\right]\text{Log}\left[\frac{c}{d}+x\right]\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]+\frac{1}{2}\text{Log}\left[\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right.$$

$$\left(-2\,\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\right)\left(\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)+$$

$$\text{Log}\left[\frac{d\,g\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\left(-\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]+\right.$$

$$\left.\text{Log}\left[-\frac{d\left(f+g\,x\right)}{-d\,f+c\,g}\right]\right)+\frac{1}{2}\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]^2$$

$$\left(\text{Log}\left[\frac{-b\,c+a\,d}{b\,d\left(\frac{a}{b}+x\right)}\right]+\text{Log}\left[\frac{b\left(f+g\,x\right)}{b\,f-a\,g}\right]-\text{Log}\left[-\frac{\left(-b\,c+a\,d\right)\left(f+g\,x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)+$$

$$\left(\text{Log}\left[\frac{c}{d}+x\right]-\text{Log}\left[-\frac{d\left(b\,f-a\,g\right)\left(\frac{c}{d}+x\right)}{b\left(-d\,f+c\,g\right)\left(\frac{a}{b}+x\right)}\right]\right)\text{PolyLog}\left[2, -\frac{b\,g\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]+$$

$$\left(\text{Log}\left[\frac{a}{b}+x\right]+\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\text{PolyLog}\left[2,\ \frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]+$$

$$\text{Log}\left[-\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\left(\text{PolyLog}\left[2,\ \frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]-\right.$$

$$\left.\text{PolyLog}\left[2,\ -\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)-\text{PolyLog}\left[3,\ -\frac{b\,g\,\left(\frac{a}{b}+x\right)}{b\,f-a\,g}\right]-\text{PolyLog}\left[3,\right.$$

$$\left.\left.\left.\frac{d\,g\,\left(\frac{c}{d}+x\right)}{-d\,f+c\,g}\right]-\text{PolyLog}\left[3,\ \frac{\frac{c}{d}+x}{\frac{a}{b}+x}\right]+\text{PolyLog}\left[3,\ -\frac{d\,(b\,f-a\,g)\,\left(\frac{c}{d}+x\right)}{b\,(-d\,f+c\,g)\,\left(\frac{a}{b}+x\right)}\right]\right)\right)\right)$$

Problem 279: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{(f+g\,x)^4}\,dx$$

Optimal (type 4, 724 leaves, 12 steps):

$$\frac{4\,B^2\,(b\,c-a\,d)^2\,g^2\,(c+d\,x)}{3\,(b\,f-a\,g)^2\,(d\,f-c\,g)^3\,(f+g\,x)}-\frac{2\,B\,(b\,c-a\,d)\,g^2\,(c+d\,x)^2\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{3\,(b\,f-a\,g)\,(d\,f-c\,g)^3\,(f+g\,x)^2}+$$

$$\frac{4\,B\,(b\,c-a\,d)\,g\,(3\,b\,d\,f-b\,c\,g-2\,a\,d\,g)\,(a+b\,x)\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^2\,(f+g\,x)}+$$

$$\frac{b^3\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{3\,g\,(b\,f-a\,g)^3}-\frac{\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{3\,g\,(f+g\,x)^3}+\frac{4\,B^2\,(b\,c-a\,d)^3\,g^2\,\text{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^3}-$$

$$\frac{4\,B^2\,(b\,c-a\,d)^3\,g^2\,\text{Log}\left[\frac{f+g\,x}{c+d\,x}\right]}{3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^3}+\frac{8\,B^2\,(b\,c-a\,d)^2\,g\,(3\,b\,d\,f-b\,c\,g-2\,a\,d\,g)\,\text{Log}\left[\frac{f+g\,x}{c+d\,x}\right]}{3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^3}+$$

$$\left(4\,B\,(b\,c-a\,d)\,\left(a^2\,d^2\,g^2-a\,b\,d\,g\,(3\,d\,f-c\,g)+b^2\,\left(3\,d^2\,f^2-3\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

$$\left.\left(A+B\,\text{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\text{Log}\left[1-\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]\right)\Big/\left(3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^3\right)+$$

$$\left(8\,B^2\,(b\,c-a\,d)\,\left(a^2\,d^2\,g^2-a\,b\,d\,g\,(3\,d\,f-c\,g)+b^2\,\left(3\,d^2\,f^2-3\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

$$\left.\text{PolyLog}\left[2,\ \frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]\right)\Big/\left(3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^3\right)$$

Result (type 4, 55 173 leaves): Display of huge result suppressed!

Problem 280: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{(f+g\,x)^5}\,dx$$

Optimal (type 4, 1154 leaves, 15 steps):

$$-\frac{B^2\,(b\,c-a\,d)^2\,g^3\,(c+d\,x)^2}{3\,(b\,f-a\,g)^2\,(d\,f-c\,g)^4\,(f+g\,x)^2}-\frac{2\,B^2\,(b\,c-a\,d)^3\,g^3\,(c+d\,x)}{3\,(b\,f-a\,g)^3\,(d\,f-c\,g)^4\,(f+g\,x)}+$$

$$\frac{B^2\,(b\,c-a\,d)^2\,g^2\,(4\,b\,d\,f-b\,c\,g-3\,a\,d\,g)\,(c+d\,x)}{(b\,f-a\,g)^3\,(d\,f-c\,g)^4\,(f+g\,x)}+\frac{B\,(b\,c-a\,d)\,g^3\,(c+d\,x)^3\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)}{3\,(b\,f-a\,g)\,(d\,f-c\,g)^4\,(f+g\,x)^3}-$$

$$\left(B\,(b\,c-a\,d)\,g^2\,(4\,b\,d\,f-b\,c\,g-3\,a\,d\,g)\,(c+d\,x)^2\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\right)\Big/$$

$$\left(2\,(b\,f-a\,g)^2\,(d\,f-c\,g)^4\,(f+g\,x)^2\right)+$$

$$\left(B\,(b\,c-a\,d)\,g\,\left(3\,a^2\,d^2\,g^2-2\,a\,b\,d\,g\,(4\,d\,f-c\,g)+b^2\,\left(6\,d^2\,f^2-4\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

$$\left.(a+b\,x)\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\right)\Big/\left((b\,f-a\,g)^4\,(d\,f-c\,g)^3\,(f+g\,x)\right)+$$

$$\frac{b^4\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{4\,g\,(b\,f-a\,g)^4}-\frac{\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)^2}{4\,g\,(f+g\,x)^4}-\frac{2\,B^2\,(b\,c-a\,d)^4\,g^3\operatorname{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{3\,(b\,f-a\,g)^4\,(d\,f-c\,g)^4}+$$

$$\frac{B^2\,(b\,c-a\,d)^3\,g^2\,(4\,b\,d\,f-b\,c\,g-3\,a\,d\,g)\operatorname{Log}\left[\frac{a+b\,x}{c+d\,x}\right]}{(b\,f-a\,g)^4\,(d\,f-c\,g)^4}+$$

$$\frac{2\,B^2\,(b\,c-a\,d)^4\,g^3\operatorname{Log}\left[\frac{f+g\,x}{c+d\,x}\right]}{3\,(b\,f-a\,g)^4\,(d\,f-c\,g)^4}-\frac{B^2\,(b\,c-a\,d)^3\,g^2\,(4\,b\,d\,f-b\,c\,g-3\,a\,d\,g)\operatorname{Log}\left[\frac{f+g\,x}{c+d\,x}\right]}{(b\,f-a\,g)^4\,(d\,f-c\,g)^4}+$$

$$\left(2\,B^2\,(b\,c-a\,d)^2\,g\,\left(3\,a^2\,d^2\,g^2-2\,a\,b\,d\,g\,(4\,d\,f-c\,g)+b^2\,\left(6\,d^2\,f^2-4\,c\,d\,f\,g+c^2\,g^2\right)\right)\operatorname{Log}\left[\frac{f+g\,x}{c+d\,x}\right]\right)\Big/$$

$$\left((b\,f-a\,g)^4\,(d\,f-c\,g)^4\right)-$$

$$\left(B\,(b\,c-a\,d)\,(2\,b\,d\,f-b\,c\,g-a\,d\,g)\,\left(2\,a\,b\,d^2\,f\,g-a^2\,d^2\,g^2-b^2\,\left(2\,d^2\,f^2-2\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

$$\left.\left(A+B\operatorname{Log}\left[\frac{e\,(a+b\,x)^2}{(c+d\,x)^2}\right]\right)\operatorname{Log}\left[1-\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]\right)\Big/\left((b\,f-a\,g)^4\,(d\,f-c\,g)^4\right)-$$

$$\left(2\,B^2\,(b\,c-a\,d)\,(2\,b\,d\,f-b\,c\,g-a\,d\,g)\,\left(2\,a\,b\,d^2\,f\,g-a^2\,d^2\,g^2-b^2\,\left(2\,d^2\,f^2-2\,c\,d\,f\,g+c^2\,g^2\right)\right)\right.$$

$$\left.\operatorname{PolyLog}\left[2,\frac{(d\,f-c\,g)\,(a+b\,x)}{(b\,f-a\,g)\,(c+d\,x)}\right]\right)\Big/\left((b\,f-a\,g)^4\,(d\,f-c\,g)^4\right)$$

Result (type 4, 142 956 leaves): Display of huge result suppressed!

Problem 305: Result more than twice size of optimal antiderivative.

$$\int \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2 dx$$

Optimal (type 4, 137 leaves, 6 steps):

$$\frac{2 B \left(b c - a d\right) n \operatorname{Log}\left[\frac{b c - a d}{b \left(c + d x\right)}\right] \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)}{b d} +$$

$$\frac{\left(a + b x\right) \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2}{b} + \frac{2 B^2 \left(b c - a d\right) n^2 \operatorname{PolyLog}\left[2, \frac{d \left(a + b x\right)}{b \left(c + d x\right)}\right]}{b d}$$

Result (type 4, 327 leaves):

$$-\frac{1}{b d} \left(2 a A B d n + 2 a B^2 d n^2 - A^2 b d x + a B^2 d n^2 \operatorname{Log}\left[a + b x\right]^2 + \right.$$
$$2 A b B c n \operatorname{Log}\left[c + d x\right] + 2 a B^2 d n^2 \operatorname{Log}\left[c + d x\right] + b B^2 c n^2 \operatorname{Log}\left[c + d x\right]^2 +$$
$$2 a B^2 d n \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right] - 2 A b B d x \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right] +$$
$$2 b B^2 c n \operatorname{Log}\left[c + d x\right] \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right] - b B^2 d x \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]^2 -$$
$$2 B n \operatorname{Log}\left[a + b x\right] \left(b B c n \operatorname{Log}\left[c + d x\right] + B \left(-b c + a d\right) n \operatorname{Log}\left[\frac{b \left(c + d x\right)}{b c - a d}\right] + \right.$$
$$\left. \left. a d \left(A + B n + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)\right) + 2 B^2 \left(b c - a d\right) n^2 \operatorname{PolyLog}\left[2, \frac{d \left(a + b x\right)}{-b c + a d}\right]\right)$$

Problem 306: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2}{g + h x} dx$$

Optimal (type 4, 301 leaves, 10 steps):

$$-\frac{\operatorname{Log}\left[\frac{b c - a d}{b \left(c + d x\right)}\right] \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2}{h} +$$

$$\frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2 \operatorname{Log}\left[1 - \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{h} -$$

$$\frac{2 B n \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right) \operatorname{PolyLog}\left[2, \frac{d \left(a + b x\right)}{b \left(c + d x\right)}\right]}{h} +$$

$$\frac{2 B n \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right) \operatorname{PolyLog}\left[2, \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{h} +$$

$$\frac{2 B^2 n^2 \operatorname{PolyLog}\left[3, \frac{d \left(a + b x\right)}{b \left(c + d x\right)}\right]}{h} - \frac{2 B^2 n^2 \operatorname{PolyLog}\left[3, \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{h}$$

Result (type 4, 1082 leaves):

$$\frac{1}{h}\left(\left(A+B\left(-n\,\text{Log}[a+b\,x]+n\,\text{Log}[c+d\,x]+\text{Log}\left[e\,(a+b\,x)^{n}\,(c+d\,x)^{-n}\right]\right)\right)^{2}\text{Log}[g+h\,x]+\right.$$
$$2\,B\,n\left(A+B\left(-n\,\text{Log}[a+b\,x]+n\,\text{Log}[c+d\,x]+\text{Log}\left[e\,(a+b\,x)^{n}\,(c+d\,x)^{-n}\right]\right)\right)$$
$$\left(\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\text{PolyLog}\left[2,\,\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]\right)-$$
$$2\,A\,B\,n\left(\text{Log}[c+d\,x]\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+\text{PolyLog}\left[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)-$$
$$2\,B^{2}\,n\left(-n\,\text{Log}[a+b\,x]+n\,\text{Log}[c+d\,x]+\text{Log}\left[e\,(a+b\,x)^{n}\,(c+d\,x)^{-n}\right]\right)$$
$$\left(\text{Log}[c+d\,x]\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+\text{PolyLog}\left[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)+$$
$$B^{2}\,n^{2}\left(\text{Log}[a+b\,x]^{2}\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+2\,\text{Log}[a+b\,x]\,\text{PolyLog}\left[2,\,\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]-\right.$$
$$\left.2\,\text{PolyLog}\left[3,\,\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]\right)+B^{2}\,n^{2}\left(\text{Log}[c+d\,x]^{2}\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+\right.$$
$$\left.2\,\text{Log}[c+d\,x]\,\text{PolyLog}\left[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]-2\,\text{PolyLog}\left[3,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)-$$
$$2\,B^{2}\,n^{2}\left(\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\frac{1}{2}\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right.$$
$$\left(-2\,\text{Log}[a+b\,x]+\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)\left(\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]\right)+$$
$$\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\left(-\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]\right)+$$
$$\frac{1}{2}\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]^{2}$$
$$\left(\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]+\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[\frac{(-b\,c+a\,d)\,(g+h\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\right)+$$
$$\left(\text{Log}[c+d\,x]-\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\right)\text{PolyLog}\left[2,\,\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]+$$
$$\left(\text{Log}[a+b\,x]+\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\right)\text{PolyLog}\left[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]+$$
$$\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\left(\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]-\text{PolyLog}\left[2,\,\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\right)-$$
$$\text{PolyLog}\left[3,\,\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]-\text{PolyLog}\left[3,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]-$$
$$\left.\left.\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+\text{PolyLog}\left[3,\,\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]\right)\right)$$

Problem 307: Result more than twice size of optimal antiderivative.

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2}{\left(g + h x\right)^2} \, dx$$

Optimal (type 4, 208 leaves, 5 steps):

$$\frac{\left(a + b x\right) \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2}{\left(b g - a h\right) \left(g + h x\right)} +$$

$$\left(2 B \left(b c - a d\right) n \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right) \operatorname{Log}\left[1 - \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]\right) \Big/$$

$$\left(\left(b g - a h\right) \left(d g - c h\right)\right) + \frac{2 B^2 \left(b c - a d\right) n^2 \operatorname{PolyLog}\left[2, \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{\left(b g - a h\right) \left(d g - c h\right)}$$

Result (type 4, 3460 leaves):

$$\frac{1}{h \left(-b g + a h\right) \left(-d g + c h\right) \left(g + h x\right)}$$

$$\Big(-A^2 b d g^2 + A^2 b c g h + a A^2 d g h - a A^2 c h^2 + 2 A b B d g^2 n \operatorname{Log}[a + b x] -$$
$$2 A b B c g h n \operatorname{Log}[a + b x] + 2 A b B d g h n x \operatorname{Log}[a + b x] - 2 A b B c h^2 n x \operatorname{Log}[a + b x] -$$
$$b B^2 d g^2 n^2 \operatorname{Log}[a + b x]^2 + b B^2 c g h n^2 \operatorname{Log}[a + b x]^2 - b B^2 d g h n^2 x \operatorname{Log}[a + b x]^2 +$$
$$b B^2 c h^2 n^2 x \operatorname{Log}[a + b x]^2 - 2 A b B d g^2 n \operatorname{Log}[c + d x] + 2 a A B d g h n \operatorname{Log}[c + d x] -$$
$$2 A b B d g h n x \operatorname{Log}[c + d x] + 2 a A B d h^2 n x \operatorname{Log}[c + d x] + 2 b B^2 d g^2 n^2 \operatorname{Log}[a + b x] \operatorname{Log}[c + d x] -$$
$$2 a B^2 d g h n^2 \operatorname{Log}[a + b x] \operatorname{Log}[c + d x] + 2 b B^2 d g h n^2 x \operatorname{Log}[a + b x] \operatorname{Log}[c + d x] -$$
$$2 a B^2 d h^2 n^2 x \operatorname{Log}[a + b x] \operatorname{Log}[c + d x] - b B^2 d g^2 n^2 \operatorname{Log}[c + d x]^2 +$$
$$a B^2 d g h n^2 \operatorname{Log}[c + d x]^2 - b B^2 d g h n^2 x \operatorname{Log}[c + d x]^2 + a B^2 d h^2 n^2 x \operatorname{Log}[c + d x]^2 -$$
$$2 b B^2 c g h n^2 \operatorname{Log}[a + b x] \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right] + 2 a B^2 d g h n^2 \operatorname{Log}[a + b x] \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right] -$$
$$2 b B^2 c h^2 n^2 x \operatorname{Log}[a + b x] \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right] + 2 a B^2 d h^2 n^2 x \operatorname{Log}[a + b x] \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right] +$$
$$b B^2 c g h n^2 \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right]^2 - a B^2 d g h n^2 \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right]^2 + b B^2 c h^2 n^2 x \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right]^2 -$$
$$a B^2 d h^2 n^2 x \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right]^2 - 2 b B^2 c g h n^2 \operatorname{Log}\left[\frac{-b c + a d}{d \left(a + b x\right)}\right] \operatorname{Log}\left[\frac{\left(b g - a h\right) \left(c + d x\right)}{\left(d g - c h\right) \left(a + b x\right)}\right] +$$
$$2 a B^2 d g h n^2 \operatorname{Log}\left[\frac{-b c + a d}{d \left(a + b x\right)}\right] \operatorname{Log}\left[\frac{\left(b g - a h\right) \left(c + d x\right)}{\left(d g - c h\right) \left(a + b x\right)}\right] -$$
$$2 b B^2 c h^2 n^2 x \operatorname{Log}\left[\frac{-b c + a d}{d \left(a + b x\right)}\right] \operatorname{Log}\left[\frac{\left(b g - a h\right) \left(c + d x\right)}{\left(d g - c h\right) \left(a + b x\right)}\right] +$$
$$2 a B^2 d h^2 n^2 x \operatorname{Log}\left[\frac{-b c + a d}{d \left(a + b x\right)}\right] \operatorname{Log}\left[\frac{\left(b g - a h\right) \left(c + d x\right)}{\left(d g - c h\right) \left(a + b x\right)}\right] -$$
$$2 b B^2 c g h n^2 \operatorname{Log}\left[\frac{h \left(c + d x\right)}{-d g + c h}\right] \operatorname{Log}\left[\frac{\left(b g - a h\right) \left(c + d x\right)}{\left(d g - c h\right) \left(a + b x\right)}\right] +$$

$$2\,a\,B^2\,d\,g\,h\,n^2\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]-$$

$$2\,b\,B^2\,c\,h^2\,n^2\,x\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]+$$

$$2\,a\,B^2\,d\,h^2\,n^2\,x\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]+$$

$$b\,B^2\,c\,g\,h\,n^2\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]^2-a\,B^2\,d\,g\,h\,n^2\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]^2+$$

$$b\,B^2\,c\,h^2\,n^2\,x\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]^2-a\,B^2\,d\,h^2\,n^2\,x\,\text{Log}\left[\frac{(b\,g-a\,h)\,(c+d\,x)}{(d\,g-c\,h)\,(a+b\,x)}\right]^2-$$

$$2\,A\,b\,B\,d\,g^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+2\,A\,b\,B\,c\,g\,h\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$

$$2\,a\,A\,B\,d\,g\,h\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-2\,a\,A\,B\,c\,h^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$

$$2\,b\,B^2\,d\,g^2\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$

$$2\,b\,B^2\,c\,g\,h\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$

$$2\,b\,B^2\,d\,g\,h\,n\,x\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$

$$2\,b\,B^2\,c\,h^2\,n\,x\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$

$$2\,b\,B^2\,d\,g^2\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$

$$2\,a\,B^2\,d\,g\,h\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$

$$2\,b\,B^2\,d\,g\,h\,n\,x\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$

$$2\,a\,B^2\,d\,h^2\,n\,x\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-b\,B^2\,d\,g^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$

$$b\,B^2\,c\,g\,h\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+a\,B^2\,d\,g\,h\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-$$

$$a\,B^2\,c\,h^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-2\,A\,b\,B\,d\,g^2\,n\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+$$

$$2\,A\,b\,B\,c\,g\,h\,n\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-2\,A\,b\,B\,d\,g\,h\,n\,x\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+2\,A\,b\,B\,c\,h^2\,n\,x\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+$$

$$2\,b\,B^2\,d\,g^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-2\,a\,B^2\,d\,g\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+$$

$$2\,b\,B^2\,d\,g\,h\,n^2\,x\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-2\,a\,B^2\,d\,h^2\,n^2\,x\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-$$

$$2\,b\,B^2\,d\,g^2\,n^2\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+2\,b\,B^2\,c\,g\,h\,n^2\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-$$

$$2\,b\,B^2\,d\,g\,h\,n^2\,x\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+$$

$$2\,b\,B^2\,c\,h^2\,n^2\,x\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-2\,b\,B^2\,d\,g^2\,n\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]$$

$$\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+2\,b\,B^2\,c\,g\,h\,n\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-$$

$$2\,b\,B^2\,d\,g\,h\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+$$

$$2\,b\,B^2\,c\,h^2\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+2\,A\,b\,B\,d\,g^2\,n\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-$$

$$2\,a\,A\,B\,d\,g\,h\,n\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+2\,A\,b\,B\,d\,g\,h\,n\,x\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-2\,a\,A\,B\,d\,h^2\,n\,x\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-$$
$$2\,b\,B^2\,d\,g^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+2\,a\,B^2\,d\,g\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-$$
$$2\,b\,B^2\,d\,g\,h\,n^2\,x\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+2\,a\,B^2\,d\,h^2\,n^2\,x\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+$$
$$2\,b\,B^2\,d\,g^2\,n^2\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-2\,b\,B^2\,c\,g\,h\,n^2\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+$$
$$2\,b\,B^2\,d\,g\,h\,n^2\,x\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-$$
$$2\,b\,B^2\,c\,h^2\,n^2\,x\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+2\,b\,B^2\,d\,g^2\,n\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]$$
$$\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-2\,a\,B^2\,d\,g\,h\,n\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+$$
$$2\,b\,B^2\,d\,g\,h\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]-$$
$$2\,a\,B^2\,d\,h^2\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\text{Log}\left[\frac{d\,(g+h\,x)}{d\,g-c\,h}\right]+$$
$$2\,B^2\,(b\,c-a\,d)\,h\,n^2\,(g+h\,x)\,\text{PolyLog}\left[2,\,\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]-$$
$$2\,B^2\,(b\,c-a\,d)\,h\,n^2\,(g+h\,x)\,\text{PolyLog}\left[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]-$$
$$2\,b\,B^2\,c\,g\,h\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+2\,a\,B^2\,d\,g\,h\,n^2\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]-$$
$$2\,b\,B^2\,c\,h^2\,n^2\,x\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+2\,a\,B^2\,d\,h^2\,n^2\,x\,\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]\Bigg)$$

Problem 308: Result more than twice size of optimal antiderivative.

$$\int\frac{\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^2}{(g+h\,x)^3}\,dx$$

Optimal (type 4, 393 leaves, 10 steps):

$$\frac{B\,(b\,c-a\,d)\,h\,n\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)}{(b\,g-a\,h)^2\,(d\,g-c\,h)\,(g+h\,x)}+$$

$$\frac{b^2\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^2}{2\,h\,(b\,g-a\,h)^2}-$$

$$\frac{\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^2}{2\,h\,(g+h\,x)^2}+\frac{B^2\,(b\,c-a\,d)^2\,h\,n^2\,\text{Log}\left[\frac{g+h\,x}{c+d\,x}\right]}{(b\,g-a\,h)^2\,(d\,g-c\,h)^2}+$$

$$\left(B\,(b\,c-a\,d)\,(2\,b\,d\,g-b\,c\,h-a\,d\,h)\,n\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\right.$$

$$\left.\text{Log}\left[1-\frac{(d\,g-c\,h)\,(a+b\,x)}{(b\,g-a\,h)\,(c+d\,x)}\right]\right)\Big/\left((b\,g-a\,h)^2\,(d\,g-c\,h)^2\right)+$$

$$\frac{B^2\,(b\,c-a\,d)\,(2\,b\,d\,g-b\,c\,h-a\,d\,h)\,n^2\,\text{PolyLog}\left[2,\,\frac{(d\,g-c\,h)\,(a+b\,x)}{(b\,g-a\,h)\,(c+d\,x)}\right]}{(b\,g-a\,h)^2\,(d\,g-c\,h)^2}$$

Result (type 4, 15422 leaves):

$$-\frac{1}{2\,h\,(g+h\,x)^2}\left(A+B\,\left(-n\,\text{Log}\left[a+b\,x\right]+n\,\text{Log}\left[c+d\,x\right]+\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\right)^2+$$

$$\frac{1}{h}B\,n\,\left(A+B\,\left(-n\,\text{Log}\left[a+b\,x\right]+n\,\text{Log}\left[c+d\,x\right]+\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\right)$$

$$\left(\frac{b^2\,h\,(a+b\,x)}{(-b\,g+a\,h)^3\,\left(1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right)}-\left(\frac{b^2\,h^2\,(a+b\,x)^2}{(-b\,g+a\,h)^4\,\left(1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right)^2}+\frac{2\,b^2\,h\,(a+b\,x)}{(-b\,g+a\,h)^3\,\left(1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right)}\right)\right.$$

$$\left.\text{Log}\left[a+b\,x\right]-\frac{b^2\,\text{Log}\left[1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]}{(-b\,g+a\,h)^2}\right)-\frac{1}{h}A\,B\,n\,\left(\frac{d^2\,h\,(c+d\,x)}{(-d\,g+c\,h)^3\,\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)}-\right.$$

$$\left.\left(\frac{d^2\,h^2\,(c+d\,x)^2}{(-d\,g+c\,h)^4\,\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)^2}+\frac{2\,d^2\,h\,(c+d\,x)}{(-d\,g+c\,h)^3\,\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)}\right)\text{Log}\left[c+d\,x\right]-\frac{d^2\,\text{Log}\left[1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]}{(-d\,g+c\,h)^2}\right)-$$

$$\frac{1}{h}B^2\,n\,\left(-n\,\text{Log}\left[a+b\,x\right]+n\,\text{Log}\left[c+d\,x\right]+\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\left(\frac{d^2\,h\,(c+d\,x)}{(-d\,g+c\,h)^3\,\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)}-\right.$$

$$\left.\left(\frac{d^2\,h^2\,(c+d\,x)^2}{(-d\,g+c\,h)^4\,\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)^2}+\frac{2\,d^2\,h\,(c+d\,x)}{(-d\,g+c\,h)^3\,\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)}\right)\text{Log}\left[c+d\,x\right]-\frac{d^2\,\text{Log}\left[1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]}{(-d\,g+c\,h)^2}\right)+$$

$$\frac{1}{h}B^2\,n^2\left(-\frac{1}{2}\left(\frac{b^2\,h^2\,(a+b\,x)^2}{(-b\,g+a\,h)^4\,\left(1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right)^2}+\frac{2\,b^2\,h\,(a+b\,x)}{(-b\,g+a\,h)^3\,\left(1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right)}\right)\text{Log}\left[a+b\,x\right]^2+\right.$$

$$\left.\frac{b^2\,\text{Log}\left[1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]}{(-b\,g+a\,h)^2}+\text{Log}\left[a+b\,x\right]\left(\frac{b^2\,h\,(a+b\,x)}{(-b\,g+a\,h)^3\,\left(1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right)}-\frac{b^2\,\text{Log}\left[1-\frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]}{(-b\,g+a\,h)^2}\right)-\right.$$

$$\frac{b^2\,\text{PolyLog}\left[2,\ \frac{h\,(a+b\,x)}{-b\,g+a\,h}\right]}{(-b\,g+a\,h)^2}\Bigg) + \frac{1}{h}$$

$$B^2\,n^2\left(-\frac{1}{2}\left(\frac{d^2\,h^2\,(c+d\,x)^2}{(-d\,g+c\,h)^4\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)^2}+\frac{2\,d^2\,h\,(c+d\,x)}{(-d\,g+c\,h)^3\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)}\right)\text{Log}[c+d\,x]^2+\right.$$

$$\frac{d^2\,\text{Log}\left[1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]}{(-d\,g+c\,h)^2}+\text{Log}[c+d\,x]\left(\frac{d^2\,h\,(c+d\,x)}{(-d\,g+c\,h)^3\left(1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right)}-\frac{d^2\,\text{Log}\left[1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]}{(-d\,g+c\,h)^2}\right)-$$

$$\left.\frac{d^2\,\text{PolyLog}\left[2,\ \frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]}{(-d\,g+c\,h)^2}\right)-$$

$$\frac{1}{g^2}B^2\,n^2\left(\frac{1}{h}2\left(\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\frac{1}{2}\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right.\right.$$

$$\left(-2\,\text{Log}[a+b\,x]+\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)\left(\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)+$$

$$\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\left(-\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)+$$

$$\frac{1}{2}\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]^2\left(\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]+\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\right.$$

$$\left.\text{Log}\left[-\frac{(-b\,c+a\,d)\,(g+h\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)+\left(\text{Log}[c+d\,x]-\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)$$

$$\text{PolyLog}\left[2,\ -\frac{h\,(a+b\,x)}{b\,g-a\,h}\right]+\left(\text{Log}[a+b\,x]+\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)$$

$$\text{PolyLog}\left[2,\ \frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]+\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\left(\text{PolyLog}\left[2,\ \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]-\right.$$

$$\left.\text{PolyLog}\left[2,\ -\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)-\text{PolyLog}\left[3,\ -\frac{h\,(a+b\,x)}{b\,g-a\,h}\right]-\text{PolyLog}\left[3,\right.$$

$$\left.\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]-\text{PolyLog}\left[3,\ \frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+\text{PolyLog}\left[3,\ -\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\Bigg)+$$

$$h^2\left(\frac{1}{h}\left(\left(\frac{(b\,g-a\,h)\left(\frac{2\,a\,b\,x}{(b\,g-a\,h)^2}+\frac{2\,a^2\,b\,(g+h\,x)}{(b\,g-a\,h)^3}\right)}{b\,(g+h\,x)}-\frac{(b\,g-a\,h)\,x\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)}{b\,(g+h\,x)^2}-\right.\right.\right.$$

$$\left.\left.\left.\frac{a\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)}{b\,(g+h\,x)}\right)\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]-\left(2\,(-d\,g+c\,h)\,(a+b\,x)\right.\right.\right.$$

$$\left(\frac{c\,(bg-ah)\,(c+dx)}{(-dg+ch)^2\,(a+bx)}+\frac{a\,(c+dx)}{(-dg+ch)\,(a+bx)}\right)\left(\frac{(bg-ah)\,\left(\frac{bx}{bg-ah}+\frac{ab\,(g+hx)}{(bg-ah)^2}\right)}{b\,(g+hx)}+\left((-dg+ch)\,(a+bx)\left(-\frac{(-bc+ad)\,x}{(-dg+ch)\,(a+bx)}+\frac{c\,(-bc+ad)\,(g+hx)}{(-dg+ch)^2\,(a+bx)}\right)\right)\Big/\left((-bc+ad)\,(g+hx)\right)\right)\text{Log}\left[-\frac{(bg-ah)\,(c+dx)}{(-dg+ch)\,(a+bx)}\right]\Big/\left((bg-ah)\,(c+dx)\right)+$$

$$\left(-\frac{(bg-ah)\,\left(\frac{2abx}{(bg-ah)^2}+\frac{2a^2b\,(g+hx)}{(bg-ah)^3}\right)}{b\,(g+hx)}+\frac{(bg-ah)\,x\,\left(\frac{bx}{bg-ah}+\frac{ab\,(g+hx)}{(bg-ah)^2}\right)}{b\,(g+hx)^2}+\frac{a\,\left(\frac{bx}{bg-ah}+\frac{ab\,(g+hx)}{(bg-ah)^2}\right)}{b\,(g+hx)}-\frac{(-dg+ch)\,\left(\frac{2cdx}{(-dg+ch)^2}-\frac{2c^2d\,(g+hx)}{(-dg+ch)^3}\right)}{d\,(g+hx)}+\frac{(-dg+ch)\,x\,\left(-\frac{dx}{-dg+ch}+\frac{cd\,(g+hx)}{(-dg+ch)^2}\right)}{d\,(g+hx)^2}-\frac{c\,\left(-\frac{dx}{-dg+ch}+\frac{cd\,(g+hx)}{(-dg+ch)^2}\right)}{d\,(g+hx)}\right)\text{Log}\left[\frac{h\,(c+dx)}{-dg+ch}\right]$$

$$\text{Log}\left[-\frac{(bg-ah)\,(c+dx)}{(-dg+ch)\,(a+bx)}\right]+\frac{1}{2}\left(\frac{(bg-ah)\,\left(\frac{2abx}{(bg-ah)^2}+\frac{2a^2b\,(g+hx)}{(bg-ah)^3}\right)}{b\,(g+hx)}-\frac{(bg-ah)\,x\,\left(\frac{bx}{bg-ah}+\frac{ab\,(g+hx)}{(bg-ah)^2}\right)}{b\,(g+hx)^2}-\frac{a\,\left(\frac{bx}{bg-ah}+\frac{ab\,(g+hx)}{(bg-ah)^2}\right)}{b\,(g+hx)}+\left((-dg+ch)\,(a+bx)\left(\frac{2c\,(-bc+ad)\,x}{(-dg+ch)^2\,(a+bx)}-\frac{2c^2\,(-bc+ad)\,(g+hx)}{(-dg+ch)^3\,(a+bx)}\right)\right)\Big/\left((-bc+ad)\,(g+hx)\right)-\left((-dg+ch)\,x\,(a+bx)\left(-\frac{(-bc+ad)\,x}{(-dg+ch)\,(a+bx)}+\frac{c\,(-bc+ad)\,(g+hx)}{(-dg+ch)^2\,(a+bx)}\right)\right)\Big/\left((-bc+ad)\,(g+hx)^2\right)+\frac{c\,(a+bx)\,\left(-\frac{(-bc+ad)\,x}{(-dg+ch)\,(a+bx)}+\frac{c\,(-bc+ad)\,(g+hx)}{(-dg+ch)^2\,(a+bx)}\right)}{(-bc+ad)\,(g+hx)}\right)\text{Log}\left[-\frac{(bg-ah)\,(c+dx)}{(-dg+ch)\,(a+bx)}\right]^2+$$

$$2\left(-\frac{(bg-ah)\,\left(\frac{bx}{bg-ah}+\frac{ab\,(g+hx)}{(bg-ah)^2}\right)}{b\,(g+hx)}-\frac{(-dg+ch)\,\left(-\frac{dx}{-dg+ch}+\frac{cd\,(g+hx)}{(-dg+ch)^2}\right)}{d\,(g+hx)}\right)\left(-\left(\left((-dg+ch)\,(a+bx)\left(\frac{c\,(bg-ah)\,(c+dx)}{(-dg+ch)^2\,(a+bx)}+\frac{a\,(c+dx)}{(-dg+ch)\,(a+bx)}\right)\text{Log}\left[\frac{h\,(c+dx)}{-dg+ch}\right]\right)\Big/\left((bg-ah)\,(c+dx)\right)\right)+\frac{1}{h\,(c+dx)}\right)$$

$$(-dg+ch)\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)\text{Log}\left[-\frac{(bg-ah)(c+dx)}{(-dg+ch)(a+bx)}\right]\Bigg)+$$

$$\frac{1}{h(c+dx)}(-dg+ch)\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)$$

$$\Bigg(\left(\frac{(bg-ah)\left(\frac{bx}{bg-ah}+\frac{ab(g+hx)}{(bg-ah)^2}\right)}{b(g+hx)}+\frac{(-dg+ch)\left(-\frac{dx}{-dg+ch}+\frac{cd(g+hx)}{(-dg+ch)^2}\right)}{d(g+hx)}\right)$$

$$\left(-2\,\text{Log}[a+bx]+\text{Log}\left[\frac{h(c+dx)}{-dg+ch}\right]\right)+\frac{1}{h(c+dx)}$$

$$(-dg+ch)\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)\left(\text{Log}\left[\frac{b(g+hx)}{bg-ah}\right]-\text{Log}\left[-\frac{d(g+hx)}{-dg+ch}\right]\right)\Bigg)+$$

$$\frac{1}{2}\text{Log}\left[\frac{h(c+dx)}{-dg+ch}\right]\Bigg(\frac{1}{h(c+dx)}2(-dg+ch)\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)$$

$$\left(\frac{(bg-ah)\left(\frac{bx}{bg-ah}+\frac{ab(g+hx)}{(bg-ah)^2}\right)}{b(g+hx)}+\frac{(-dg+ch)\left(-\frac{dx}{-dg+ch}+\frac{cd(g+hx)}{(-dg+ch)^2}\right)}{d(g+hx)}\right)+$$

$$\Bigg(\frac{(bg-ah)\left(\frac{2abx}{(bg-ah)^2}+\frac{2a^2b(g+hx)}{(bg-ah)^3}\right)}{b(g+hx)}-\frac{(bg-ah)x\left(\frac{bx}{bg-ah}+\frac{ab(g+hx)}{(bg-ah)^2}\right)}{b(g+hx)^2}-$$

$$\frac{a\left(\frac{bx}{bg-ah}+\frac{ab(g+hx)}{(bg-ah)^2}\right)}{b(g+hx)}+\frac{(-dg+ch)\left(\frac{2cdx}{(-dg+ch)^2}-\frac{2c^2d(g+hx)}{(-dg+ch)^3}\right)}{d(g+hx)}-$$

$$\frac{(-dg+ch)x\left(-\frac{dx}{-dg+ch}+\frac{cd(g+hx)}{(-dg+ch)^2}\right)}{d(g+hx)^2}+\frac{c\left(-\frac{dx}{-dg+ch}+\frac{cd(g+hx)}{(-dg+ch)^2}\right)}{d(g+hx)}\Bigg)$$

$$\left(-2\,\text{Log}[a+bx]+\text{Log}\left[\frac{h(c+dx)}{-dg+ch}\right]\right)+\Bigg(\frac{(-dg+ch)\left(\frac{2c^2h(c+dx)}{(-dg+ch)^3}-\frac{2c(c+dx)}{(-dg+ch)^2}\right)}{h(c+dx)}+$$

$$\frac{c\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)}{h(c+dx)}-\frac{(-dg+ch)\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)}{h^2(c+dx)}\Bigg)\Bigg(\text{Log}\Bigg[$$

$$\frac{b(g+hx)}{bg-ah}\Bigg]-\text{Log}\left[-\frac{d(g+hx)}{-dg+ch}\right]\Bigg)\Bigg)+\frac{1}{2}\Bigg(\frac{(-dg+ch)\left(\frac{2c^2h(c+dx)}{(-dg+ch)^3}-\frac{2c(c+dx)}{(-dg+ch)^2}\right)}{h(c+dx)}+$$

$$\frac{c\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)}{h(c+dx)}-\frac{(-dg+ch)\left(-\frac{ch(c+dx)}{(-dg+ch)^2}+\frac{c+dx}{-dg+ch}\right)}{h^2(c+dx)}\Bigg)$$

$$\left(-2\,\text{Log}[a+bx]+\text{Log}\left[\frac{h(c+dx)}{-dg+ch}\right]\right)\left(\text{Log}\left[\frac{b(g+hx)}{bg-ah}\right]-\text{Log}\left[-\frac{d(g+hx)}{-dg+ch}\right]\right)+$$

$$\left(-\left(\left(\left(2\left(-d g+c h\right)^2\left(a+b x\right)\left(-\frac{c h\left(c+d x\right)}{\left(-d g+c h\right)^2}+\frac{c+d x}{-d g+c h}\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\Big/\left(h\left(b g-a h\right)\left(c+d x\right)^2\right)\right)+\left(-\left(\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)\right)-\frac{c\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)}{\left(b g-a h\right)\left(c+d x\right)}-\left(a\left(-d g+c h\right)\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)\right)\right)\text{Log}\left[\frac{h\left(c+d x\right)}{-d g+c h}\right]+\left(\frac{\left(-d g+c h\right)\left(\frac{2 c^2 h\left(c+d x\right)}{\left(-d g+c h\right)^3}-\frac{2 c\left(c+d x\right)}{\left(-d g+c h\right)^2}\right)}{h\left(c+d x\right)}+\frac{c\left(-\frac{c h\left(c+d x\right)}{\left(-d g+c h\right)^2}+\frac{c+d x}{-d g+c h}\right)}{h\left(c+d x\right)}-\frac{\left(-d g+c h\right)\left(-\frac{c h\left(c+d x\right)}{\left(-d g+c h\right)^2}+\frac{c+d x}{-d g+c h}\right)}{h^2\left(c+d x\right)}\right)\text{Log}\left[-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\left(-\text{Log}\left[\frac{b\left(g+h x\right)}{b g-a h}\right]+\text{Log}\left[-\frac{d\left(g+h x\right)}{-d g+c h}\right]\right)+\frac{1}{2}\left(\left(\left(2\left(-d g+c h\right)^2\left(a+b x\right)^2\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)^2\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)^2\right)-\left(2\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\text{Log}\left[-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)-\left(2 c\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\text{Log}\left[-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)-\left(2 a\left(-d g+c h\right)\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\text{Log}\left[-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)\right)\right)$$

$$\left(\text{Log}\left[\frac{-b c+a d}{d (a+b x)}\right]+\text{Log}\left[\frac{b (g+h x)}{b g-a h}\right]-\text{Log}\left[-\frac{(-b c+a d) (g+h x)}{(-d g+c h) (a+b x)}\right]\right)+$$

$$\frac{(b g-a h)^2 \left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right)^2 \text{Log}\left[1+\frac{h (a+b x)}{b g-a h}\right]}{h^2 (a+b x)^2}+\frac{1}{h (c+d x)} 2 (-d g+c h)$$

$$\left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right)\left(\frac{c (b g-a h) (c+d x)}{(-d g+c h)^2 (a+b x)}+\frac{a (c+d x)}{(-d g+c h) (a+b x)}\right)$$

$$\text{Log}\left[1+\frac{h (a+b x)}{b g-a h}\right]+\left(\text{Log}[c+d x]-\text{Log}\left[-\frac{(b g-a h) (c+d x)}{(-d g+c h) (a+b x)}\right]\right)$$

$$\left(\frac{(b g-a h)\left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right)\left(\frac{a h (a+b x)}{(b g-a h)^2}+\frac{a+b x}{b g-a h}\right)}{h (a+b x)\left(1+\frac{h (a+b x)}{b g-a h}\right)}+\right.$$

$$\frac{(b g-a h)\left(-\frac{2 a^2 h (a+b x)}{(b g-a h)^3}-\frac{2 a (a+b x)}{(b g-a h)^2}\right)\text{Log}\left[1+\frac{h (a+b x)}{b g-a h}\right]}{h (a+b x)}-$$

$$\frac{a\left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right)\text{Log}\left[1+\frac{h (a+b x)}{b g-a h}\right]}{h (a+b x)}-$$

$$\left.\frac{(b g-a h)\left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right)\text{Log}\left[1+\frac{h (a+b x)}{b g-a h}\right]}{h^2 (a+b x)}\right)+$$

$$\frac{(-d g+c h)^2 \left(-\frac{c h (c+d x)}{(-d g+c h)^2}+\frac{c+d x}{-d g+c h}\right)^2 \text{Log}\left[1-\frac{h (c+d x)}{-d g+c h}\right]}{h^2 (c+d x)^2}+$$

$$\left(2 (-d g+c h)^2 (a+b x)\left(-\frac{c h (c+d x)}{(-d g+c h)^2}+\frac{c+d x}{-d g+c h}\right)\right.$$

$$\left.\left(\frac{c (b g-a h) (c+d x)}{(-d g+c h)^2 (a+b x)}+\frac{a (c+d x)}{(-d g+c h) (a+b x)}\right)\text{Log}\left[1-\frac{h (c+d x)}{-d g+c h}\right]\right)\Big/$$

$$\left(h (b g-a h) (c+d x)^2\right)+\left(\text{Log}[a+b x]+\text{Log}\left[-\frac{(b g-a h) (c+d x)}{(-d g+c h) (a+b x)}\right]\right)$$

$$\left(-\left(\left((-d g+c h)\left(\frac{c h (c+d x)}{(-d g+c h)^2}-\frac{c+d x}{-d g+c h}\right)\left(-\frac{c h (c+d x)}{(-d g+c h)^2}+\frac{c+d x}{-d g+c h}\right)\right)\Big/\right.\right.$$

$$\left.\left.\left(h (c+d x)\left(1-\frac{h (c+d x)}{-d g+c h}\right)\right)\right)\right)-$$

$$\frac{(-d g+c h)\left(\frac{2 c^2 h (c+d x)}{(-d g+c h)^3}-\frac{2 c (c+d x)}{(-d g+c h)^2}\right)\text{Log}\left[1-\frac{h (c+d x)}{-d g+c h}\right]}{h (c+d x)}-$$

$$\frac{c\left(-\frac{c h (c+d x)}{(-d g+c h)^2}+\frac{c+d x}{-d g+c h}\right)\text{Log}\left[1-\frac{h (c+d x)}{-d g+c h}\right]}{h (c+d x)}+$$

$$\frac{\left(-d g+c h\right)\left(-\frac{c h (c+d x)}{(-d g+c h)^2}+\frac{c+d x}{-d g+c h}\right) \text{Log}\left[1-\frac{h (c+d x)}{-d g+c h}\right]}{h^2\left(c+d x\right)}\Bigg)+$$

$$\left(\left(-d g+c h\right)^2\left(a+b x\right)^2\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)^2\right.$$

$$\left.\text{Log}\left[1+\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)^2\right)+$$

$$\text{Log}\left[-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\left(-\left(\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}-\right.\right.\right.\right.$$

$$\left.\left.\left.\left.\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\Big/\right.$$

$$\left.\left.\left.\left(\left(b g-a h\right)\left(c+d x\right)\left(1+\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\right)\right)-$$

$$\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\right.$$

$$\left.\text{Log}\left[1+\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)-$$

$$\left(c\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right.$$

$$\left.\text{Log}\left[1+\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)-$$

$$\left(a\left(-d g+c h\right)\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right.$$

$$\left.\text{Log}\left[1+\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)\right)+$$

$$\frac{\left(b g-a h\right)\left(-\frac{2 a^2 h (a+b x)}{(b g-a h)^3}-\frac{2 a (a+b x)}{(b g-a h)^2}\right) \text{PolyLog}\left[2,-\frac{h (a+b x)}{b g-a h}\right]}{h\left(a+b x\right)}-$$

$$\frac{a\left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right) \text{PolyLog}\left[2,-\frac{h (a+b x)}{b g-a h}\right]}{h\left(a+b x\right)}-$$

$$\frac{\left(b g-a h\right)\left(-\frac{a h (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right) \text{PolyLog}\left[2,-\frac{h (a+b x)}{b g-a h}\right]}{h^2\left(a+b x\right)}+$$

$$\left(\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\right)\Big/\right.$$

$$\left.\left(\left(b g-a h\right)\left(c+d x\right)\right)+\frac{c\left(a+b x\right)\left(\frac{c (b g-a h) (c+d x)}{(-d g+c h)^2 (a+b x)}+\frac{a (c+d x)}{(-d g+c h) (a+b x)}\right)}{\left(b g-a h\right)\left(c+d x\right)}+\right.$$

$$\left(a\left(-d g+c h\right)\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)\right)\Bigg)\text{PolyLog}\left[2,-\frac{h\left(a+b x\right)}{b g-a h}\right]-$$

$$\frac{\left(-d g+c h\right)\left(\frac{2 c^2 h\left(c+d x\right)}{\left(-d g+c h\right)^3}-\frac{2 c\left(c+d x\right)}{\left(-d g+c h\right)^2}\right)\text{PolyLog}\left[2,\frac{h\left(c+d x\right)}{-d g+c h}\right]}{h\left(c+d x\right)}-$$

$$\frac{c\left(-\frac{c h\left(c+d x\right)}{\left(-d g+c h\right)^2}+\frac{c+d x}{-d g+c h}\right)\text{PolyLog}\left[2,\frac{h\left(c+d x\right)}{-d g+c h}\right]}{h\left(c+d x\right)}+$$

$$\frac{\left(-d g+c h\right)\left(-\frac{c h\left(c+d x\right)}{\left(-d g+c h\right)^2}+\frac{c+d x}{-d g+c h}\right)\text{PolyLog}\left[2,\frac{h\left(c+d x\right)}{-d g+c h}\right]}{h^2\left(c+d x\right)}+$$

$$\left(-\left(\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)\right)-\frac{c\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)}{\left(b g-a h\right)\left(c+d x\right)}-\left(a\left(-d g+c h\right)\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)\right)\Bigg)\text{PolyLog}\left[2,\frac{h\left(c+d x\right)}{-d g+c h}\right]+$$

$$\left(-\left(\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)\right)-\frac{c\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)}{\left(b g-a h\right)\left(c+d x\right)}-\left(a\left(-d g+c h\right)\left(a+b x\right)\left(\frac{c\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}+\frac{a\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right)\right)\Big/\left(\left(b g-a h\right)^2\left(c+d x\right)\right)\Bigg)$$

$$\left(\text{PolyLog}\left[2,\frac{b\left(c+d x\right)}{d\left(a+b x\right)}\right]-\text{PolyLog}\left[2,-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)-$$

$$\left(\left(-d g+c h\right)\left(a+b x\right)\left(-\frac{2 c^2\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)^3\left(a+b x\right)}-\frac{2 a c\left(c+d x\right)}{\left(-d g+c h\right)^2\left(a+b x\right)}\right)\text{PolyLog}\left[2,-\frac{\left(b g-a h\right)\left(c+d x\right)}{\left(-d g+c h\right)\left(a+b x\right)}\right]\right)\Big/\left(\left(b g-a h\right)\left(c+d x\right)\right)-$$

$$\left(c\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\,-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)\Big/\,\left((b\,g-a\,h)\,(c+d\,x)\right)\,-$$

$$\left(a\,(-d\,g+c\,h)\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\,-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)\Big/\,\left((b\,g-a\,h)^2\,(c+d\,x)\right)\Bigg)\,-$$

$$\frac{1}{h^2}\,2\,\left(\frac{(b\,g-a\,h)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b\,(g+h\,x)}+\right.$$

$$\frac{1}{2}\left(\frac{(b\,g-a\,h)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)}{b\,(g+h\,x)}+\frac{(-d\,g+c\,h)\,\left(-\frac{d\,x}{-d\,g+c\,h}+\frac{c\,d\,(g+h\,x)}{(-d\,g+c\,h)^2}\right)}{d\,(g+h\,x)}\right)$$

$$\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\left(-2\,\text{Log}[a+b\,x]+\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)+$$

$$\left(-\frac{(b\,g-a\,h)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)}{b\,(g+h\,x)}-\frac{(-d\,g+c\,h)\,\left(-\frac{d\,x}{-d\,g+c\,h}+\frac{c\,d\,(g+h\,x)}{(-d\,g+c\,h)^2}\right)}{d\,(g+h\,x)}\right)$$

$$\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\,\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]+\frac{1}{2}\left(\frac{(b\,g-a\,h)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)}{b\,(g+h\,x)}+\right.$$

$$\left.\left((-d\,g+c\,h)\,(a+b\,x)\,\left(-\frac{(-b\,c+a\,d)\,x}{(-d\,g+c\,h)\,(a+b\,x)}+\frac{c\,(-b\,c+a\,d)\,(g+h\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}\right)\right)\Big/\right.$$

$$\left.\left((-b\,c+a\,d)\,(g+h\,x)\right)\right)\,\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]^2+$$

$$\frac{1}{2\,h\,(c+d\,x)}\,(-d\,g+c\,h)\,\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)\,\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]$$

$$\left(\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)+\frac{1}{2\,h\,(c+d\,x)}$$

$$(-d\,g+c\,h)\,\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)\,\left(-2\,\text{Log}[a+b\,x]+\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)$$

$$\left(\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)-$$

$$\left((-d\,g+c\,h)\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\,\text{Log}\right.$$

$$\frac{h\,(c+d\,x)}{-d\,g+c\,h}\Big]\,\left(-\text{Log}\Big[\frac{b\,(g+h\,x)}{b\,g-a\,h}\Big]+\text{Log}\Big[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\Big]\right)\Big)\Big/\,\left((b\,g-a\,h)\,(c+d\,x)\right)+$$

$$\frac{1}{h\,(c+d\,x)}(-d\,g+c\,h)\,\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)\text{Log}\Big[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]$$

$$\left(-\text{Log}\Big[\frac{b\,(g+h\,x)}{b\,g-a\,h}\Big]+\text{Log}\Big[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\Big]\right)-$$

$$\left((-d\,g+c\,h)\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\text{Log}\Big[\right.$$

$$\left.-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\,\left(\text{Log}\Big[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\Big]+\text{Log}\Big[\frac{b\,(g+h\,x)}{b\,g-a\,h}\Big]-\right.\right.$$

$$\left.\left.\text{Log}\Big[-\frac{(-b\,c+a\,d)\,(g+h\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\right)\right)\Big/\,\left((b\,g-a\,h)\,(c+d\,x)\right)+\frac{1}{h\,(a+b\,x)}$$

$$(b\,g-a\,h)\,\left(-\frac{a\,h\,(a+b\,x)}{(b\,g-a\,h)^2}-\frac{a+b\,x}{b\,g-a\,h}\right)\left(\text{Log}[c+d\,x]-\text{Log}\Big[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\right)$$

$$\text{Log}\Big[1+\frac{h\,(a+b\,x)}{b\,g-a\,h}\Big]-\frac{1}{h\,(c+d\,x)}(-d\,g+c\,h)\,\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)$$

$$\left(\text{Log}[a+b\,x]+\text{Log}\Big[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\right)\text{Log}\Big[1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\Big]-$$

$$\left((-d\,g+c\,h)\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\text{Log}\Big[\right.$$

$$\left.-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\,\text{Log}\Big[1+\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\right)\Big/\,\left((b\,g-a\,h)\,(c+d\,x)\right)+$$

$$\frac{(b\,g-a\,h)\,\left(-\frac{a\,h\,(a+b\,x)}{(b\,g-a\,h)^2}-\frac{a+b\,x}{b\,g-a\,h}\right)\text{PolyLog}\Big[2,\,-\frac{h\,(a+b\,x)}{b\,g-a\,h}\Big]}{h\,(a+b\,x)}+\left((-d\,g+c\,h)\,(a+b\,x)\right.$$

$$\left.\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\text{PolyLog}\Big[2,\,-\frac{h\,(a+b\,x)}{b\,g-a\,h}\Big]\right)\Big/$$

$$\left((b\,g-a\,h)\,(c+d\,x)\right)-\frac{(-d\,g+c\,h)\,\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)\text{PolyLog}\Big[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\Big]}{h\,(c+d\,x)}-$$

$$\left((-d\,g+c\,h)\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\right.$$

$$\left.\text{PolyLog}\Big[2,\,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\Big]\right)\Big/\,\left((b\,g-a\,h)\,(c+d\,x)\right)-$$

$$\left((-d\,g+c\,h)\,(a+b\,x)\,\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\left(\text{PolyLog}\Big[2,\right.\right.$$

$$\left.\left.\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\Big]-\text{PolyLog}\Big[2,\,-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\Big]\right)\right)\Big/\,\left((b\,g-a\,h)\,(c+d\,x)\right)-$$

$$\left(\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)\,\left(\frac{c\,\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)^2\,\left(a+b\,x\right)}+\frac{a\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\,-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\right)\Big/\left(\left(b\,g-a\,h\right)\,\left(c+d\,x\right)\right)\Bigg)+$$

$$\frac{1}{h^3}\,2\,\left(\text{Log}\left[a+b\,x\right]\,\text{Log}\left[c+d\,x\right]\,\text{Log}\left[\frac{b\,\left(g+h\,x\right)}{b\,g-a\,h}\right]+\frac{1}{2}\,\text{Log}\left[\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]\right.$$

$$\left(-2\,\text{Log}\left[a+b\,x\right]+\text{Log}\left[\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]\right)\,\left(\text{Log}\left[\frac{b\,\left(g+h\,x\right)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{d\,\left(g+h\,x\right)}{-d\,g+c\,h}\right]\right)+$$

$$\text{Log}\left[\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]\,\text{Log}\left[-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]$$

$$\left(-\text{Log}\left[\frac{b\,\left(g+h\,x\right)}{b\,g-a\,h}\right]+\text{Log}\left[-\frac{d\,\left(g+h\,x\right)}{-d\,g+c\,h}\right]\right)+\frac{1}{2}\,\text{Log}\left[-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]^2$$

$$\left(\text{Log}\left[\frac{-b\,c+a\,d}{d\,\left(a+b\,x\right)}\right]+\text{Log}\left[\frac{b\,\left(g+h\,x\right)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{\left(-b\,c+a\,d\right)\,\left(g+h\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\right)+$$

$$\left(\text{Log}\left[c+d\,x\right]-\text{Log}\left[-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\right)\,\text{PolyLog}\left[2,\,-\frac{h\,\left(a+b\,x\right)}{b\,g-a\,h}\right]+$$

$$\left(\text{Log}\left[a+b\,x\right]+\text{Log}\left[-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\right)\,\text{PolyLog}\left[2,\,\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]+$$

$$\text{Log}\left[-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\,\left(\text{PolyLog}\left[2,\,\frac{b\,\left(c+d\,x\right)}{d\,\left(a+b\,x\right)}\right]-\text{PolyLog}\left[2,\right.\right.$$

$$\left.\left.-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\right)-\text{PolyLog}\left[3,\,-\frac{h\,\left(a+b\,x\right)}{b\,g-a\,h}\right]-\text{PolyLog}\left[3,\,\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]-$$

$$\left.\text{PolyLog}\left[3,\,\frac{b\,\left(c+d\,x\right)}{d\,\left(a+b\,x\right)}\right]+\text{PolyLog}\left[3,\,-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]\right)\Bigg)+$$

$$4\,h\,\left(\frac{1}{h}\,\left(\frac{\left(b\,g-a\,h\right)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,\left(g+h\,x\right)}{\left(b\,g-a\,h\right)^2}\right)\,\text{Log}\left[a+b\,x\right]\,\text{Log}\left[c+d\,x\right]}{b\,\left(g+h\,x\right)}+\right.\right.$$

$$\frac{1}{2}\,\left(\frac{\left(b\,g-a\,h\right)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,\left(g+h\,x\right)}{\left(b\,g-a\,h\right)^2}\right)}{b\,\left(g+h\,x\right)}+\frac{\left(-d\,g+c\,h\right)\,\left(-\frac{d\,x}{-d\,g+c\,h}+\frac{c\,d\,\left(g+h\,x\right)}{\left(-d\,g+c\,h\right)^2}\right)}{d\,\left(g+h\,x\right)}\right)$$

$$\text{Log}\left[\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]\,\left(-2\,\text{Log}\left[a+b\,x\right]+\text{Log}\left[\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]\right)+$$

$$\left(-\frac{\left(b\,g-a\,h\right)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,\left(g+h\,x\right)}{\left(b\,g-a\,h\right)^2}\right)}{b\,\left(g+h\,x\right)}-\frac{\left(-d\,g+c\,h\right)\,\left(-\frac{d\,x}{-d\,g+c\,h}+\frac{c\,d\,\left(g+h\,x\right)}{\left(-d\,g+c\,h\right)^2}\right)}{d\,\left(g+h\,x\right)}\right)$$

$$\text{Log}\left[\frac{h\,\left(c+d\,x\right)}{-d\,g+c\,h}\right]\,\text{Log}\left[-\frac{\left(b\,g-a\,h\right)\,\left(c+d\,x\right)}{\left(-d\,g+c\,h\right)\,\left(a+b\,x\right)}\right]+$$

$$\frac{1}{2}\left(\frac{(b\,g-a\,h)\,\left(\frac{b\,x}{b\,g-a\,h}+\frac{a\,b\,(g+h\,x)}{(b\,g-a\,h)^2}\right)}{b\,(g+h\,x)}+\left((-d\,g+c\,h)\,(a+b\,x)\right.\right.$$
$$\left.\left.\left(-\frac{(-b\,c+a\,d)\,x}{(-d\,g+c\,h)\,(a+b\,x)}+\frac{c\,(-b\,c+a\,d)\,(g+h\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}\right)\right)\Big/\left((-b\,c+a\,d)\,(g+h\,x)\right)\Bigg)$$
$$\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]^2+\frac{1}{2\,h\,(c+d\,x)}(-d\,g+c\,h)\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)$$
$$\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\left(\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)+$$
$$\frac{1}{2\,h\,(c+d\,x)}(-d\,g+c\,h)\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)$$
$$\left(-2\,\text{Log}[a+b\,x]+\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right)\left(\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)-$$
$$\left((-d\,g+c\,h)\,(a+b\,x)\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\text{Log}\left[\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]\right.$$
$$\left.\left(-\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)\right)\Big/\left((b\,g-a\,h)\,(c+d\,x)\right)+\frac{1}{h\,(c+d\,x)}$$
$$(-d\,g+c\,h)\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]$$
$$\left(-\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]+\text{Log}\left[-\frac{d\,(g+h\,x)}{-d\,g+c\,h}\right]\right)-\left((-d\,g+c\,h)\,(a+b\,x)\right.$$
$$\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]$$
$$\left.\left(\text{Log}\left[\frac{-b\,c+a\,d}{d\,(a+b\,x)}\right]+\text{Log}\left[\frac{b\,(g+h\,x)}{b\,g-a\,h}\right]-\text{Log}\left[-\frac{(-b\,c+a\,d)\,(g+h\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)\right)\Big/$$
$$\left((b\,g-a\,h)\,(c+d\,x)\right)+\frac{1}{h\,(a+b\,x)}(b\,g-a\,h)\left(-\frac{a\,h\,(a+b\,x)}{(b\,g-a\,h)^2}-\frac{a+b\,x}{b\,g-a\,h}\right)$$
$$\left(\text{Log}[c+d\,x]-\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)\text{Log}\left[1+\frac{h\,(a+b\,x)}{b\,g-a\,h}\right]-$$
$$\frac{1}{h\,(c+d\,x)}(-d\,g+c\,h)\left(-\frac{c\,h\,(c+d\,x)}{(-d\,g+c\,h)^2}+\frac{c+d\,x}{-d\,g+c\,h}\right)$$
$$\left(\text{Log}[a+b\,x]+\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)\text{Log}\left[1-\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]-$$
$$\left((-d\,g+c\,h)\,(a+b\,x)\left(\frac{c\,(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)^2\,(a+b\,x)}+\frac{a\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right)\right.$$

$$\text{Log}\left[-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right] \text{Log}\left[1+\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]\Bigg)\Bigg/ \left((b g-a h)\ (c+d x)\right)+\frac{(b g-a h)\ \left(-\frac{a h\ (a+b x)}{(b g-a h)^2}-\frac{a+b x}{b g-a h}\right) \text{PolyLog}\left[2,-\frac{h\ (a+b x)}{b g-a h}\right]}{h\ (a+b x)}+$$

$$\left((-d g+c h)\ (a+b x)\left(\frac{c\ (b g-a h)\ (c+d x)}{(-d g+c h)^2\ (a+b x)}+\frac{a\ (c+d x)}{(-d g+c h)\ (a+b x)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,-\frac{h\ (a+b x)}{b g-a h}\right]\right)\Bigg/ \left((b g-a h)\ (c+d x)\right)-$$

$$\frac{(-d g+c h)\ \left(-\frac{c h\ (c+d x)}{(-d g+c h)^2}+\frac{c+d x}{-d g+c h}\right) \text{PolyLog}\left[2,\frac{h\ (c+d x)}{-d g+c h}\right]}{h\ (c+d x)}-$$

$$\left((-d g+c h)\ (a+b x)\left(\frac{c\ (b g-a h)\ (c+d x)}{(-d g+c h)^2\ (a+b x)}+\frac{a\ (c+d x)}{(-d g+c h)\ (a+b x)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,\frac{h\ (c+d x)}{-d g+c h}\right]\right)\Bigg/ \left((b g-a h)\ (c+d x)\right)-$$

$$\left((-d g+c h)\ (a+b x)\left(\frac{c\ (b g-a h)\ (c+d x)}{(-d g+c h)^2\ (a+b x)}+\frac{a\ (c+d x)}{(-d g+c h)\ (a+b x)}\right)\right)\left(\text{PolyLog}\left[2,\right.\right.$$

$$\left.\left.\frac{b\ (c+d x)}{d\ (a+b x)}\right]-\text{PolyLog}\left[2,-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]\right)\Bigg)\Bigg/ \left((b g-a h)\ (c+d x)\right)-$$

$$\left((-d g+c h)\ (a+b x)\left(\frac{c\ (b g-a h)\ (c+d x)}{(-d g+c h)^2\ (a+b x)}+\frac{a\ (c+d x)}{(-d g+c h)\ (a+b x)}\right)\right.$$

$$\left.\text{PolyLog}\left[2,-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]\right)\Bigg/ \left((b g-a h)\ (c+d x)\right)\Bigg)-$$

$$\frac{1}{h^2}\left(\text{Log}[a+b x]\ \text{Log}[c+d x]\ \text{Log}\left[\frac{b\ (g+h x)}{b g-a h}\right]+\frac{1}{2}\text{Log}\left[\frac{h\ (c+d x)}{-d g+c h}\right]\right.$$

$$\left(-2\,\text{Log}[a+b x]+\text{Log}\left[\frac{h\ (c+d x)}{-d g+c h}\right]\right)\left(\text{Log}\left[\frac{b\ (g+h x)}{b g-a h}\right]-\text{Log}\left[-\frac{d\ (g+h x)}{-d g+c h}\right]\right)+$$

$$\text{Log}\left[\frac{h\ (c+d x)}{-d g+c h}\right]\text{Log}\left[-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]$$

$$\left(-\text{Log}\left[\frac{b\ (g+h x)}{b g-a h}\right]+\text{Log}\left[-\frac{d\ (g+h x)}{-d g+c h}\right]\right)+\frac{1}{2}\text{Log}\left[-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]^2$$

$$\left(\text{Log}\left[\frac{-b c+a d}{d\ (a+b x)}\right]+\text{Log}\left[\frac{b\ (g+h x)}{b g-a h}\right]-\text{Log}\left[-\frac{(-b c+a d)\ (g+h x)}{(-d g+c h)\ (a+b x)}\right]\right)+$$

$$\left(\text{Log}[c+d x]-\text{Log}\left[-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]\right)\text{PolyLog}\left[2,-\frac{h\ (a+b x)}{b g-a h}\right]+$$

$$\left(\text{Log}[a+b x]+\text{Log}\left[-\frac{(b g-a h)\ (c+d x)}{(-d g+c h)\ (a+b x)}\right]\right)\text{PolyLog}\left[2,\frac{h\ (c+d x)}{-d g+c h}\right]+$$

$$\text{Log}\left[-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\left(\text{PolyLog}\left[2,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]-\text{PolyLog}\left[2,-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\right)-\text{PolyLog}\left[3,-\frac{h\,(a+b\,x)}{b\,g-a\,h}\right]-\text{PolyLog}\left[3,\frac{h\,(c+d\,x)}{-d\,g+c\,h}\right]-\text{PolyLog}\left[3,\frac{b\,(c+d\,x)}{d\,(a+b\,x)}\right]+\text{PolyLog}\left[3,-\frac{(b\,g-a\,h)\,(c+d\,x)}{(-d\,g+c\,h)\,(a+b\,x)}\right]\Bigg)\Bigg)$$

Problem 309: Result more than twice size of optimal antiderivative.

$$\int (g+h\,x)^2\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3 \mathbb{d}x$$

Optimal (type 4, 875 leaves, 19 steps):

$$-\frac{B^3 (b c-a d)^3 h^2 n^3 \text{Log}[c+d x]}{b^3 d^3}+$$

$$\frac{B^2 (b c-a d)^2 h^2 n^2 (a+b x) \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)}{b^3 d^2}-\frac{1}{b^3 d^3}$$

$$2 B^2 (b c-a d)^2 h (3 b d g-2 b c h-a d h) n^2 \text{Log}\left[\frac{b c-a d}{b (c+d x)}\right] \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)-$$

$$\frac{1}{b^3 d^2} B (b c-a d) h (3 b d g-2 b c h-a d h) n (a+b x) \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2-$$

$$\frac{B (b c-a d) h^2 n (c+d x)^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2}{2 b d^3}+\frac{1}{b^3 d^3}$$

$$B (b c-a d) \left(a^2 d^2 h^2-a b d h (3 d g-c h)+b^2 \left(3 d^2 g^2-3 c d g h+c^2 h^2\right)\right)$$

$$n \text{Log}\left[\frac{b c-a d}{b (c+d x)}\right] \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^2-$$

$$\frac{(b g-a h)^3 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^3}{3 b^3 h}+\frac{(g+h x)^3 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)^3}{3 h}-$$

$$\frac{1}{b^3 d^3} B^2 (b c-a d)^3 h^2 n^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right) \text{Log}\left[1-\frac{b (c+d x)}{d (a+b x)}\right]-$$

$$\frac{2 B^3 (b c-a d)^2 h (3 b d g-2 b c h-a d h) n^3 \text{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{b^3 d^3}+\frac{1}{b^3 d^3}$$

$$2 B^2 (b c-a d) \left(a^2 d^2 h^2-a b d h (3 d g-c h)+b^2 \left(3 d^2 g^2-3 c d g h+c^2 h^2\right)\right)$$

$$n^2 \left(A+B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]+$$

$$\frac{B^3 (b c-a d)^3 h^2 n^3 \text{PolyLog}\left[2, \frac{b (c+d x)}{d (a+b x)}\right]}{b^3 d^3}-\frac{1}{b^3 d^3} 2 B^3 (b c-a d)$$

$$\left(a^2 d^2 h^2-a b d h (3 d g-c h)+b^2 \left(3 d^2 g^2-3 c d g h+c^2 h^2\right)\right) n^3 \text{PolyLog}\left[3, \frac{d (a+b x)}{b (c+d x)}\right]$$

Result (type 4, 7328 leaves) :

$$-\frac{6 a A B^2 g^2 n^2}{b}-\frac{6 A B^2 c g^2 n^2}{d}+\frac{12 a A B^2 c g h n^2}{b d}-\frac{2 a A B^2 c^2 h^2 n^2}{b d^2}-\frac{2 a^2 A B^2 c h^2 n^2}{b^2 d}+$$

$$\frac{6 a B^3 g^2 n^3}{b}-\frac{6 a^2 B^3 g h n^3}{b^2}-\frac{6 B^3 c^2 g h n^3}{d^2}+\frac{6 a B^3 c g h n^3}{b d}+\frac{2 a^3 B^3 h^2 n^3}{b^3}+\frac{2 B^3 c^3 h^2 n^3}{d^3}-$$

$$\frac{a B^3 c^2 h^2 n^3}{b d^2}-\frac{a^2 B^3 c h^2 n^3}{b^2 d}+A^3 g^2 x+\frac{3 a A^2 B g h n x}{b}-\frac{3 A^2 B c g h n x}{d}-\frac{a^2 A^2 B h^2 n x}{b^2}+$$

$$\frac{A^2 B c^2 h^2 n x}{d^2}+\frac{a^2 A B^2 h^2 n^2 x}{b^2}+\frac{A B^2 c^2 h^2 n^2 x}{d^2}-\frac{2 a A B^2 c h^2 n^2 x}{b d}+A^3 g h x^2+\frac{a A^2 B h^2 n x^2}{2 b}-$$

$$\frac{A^2 B c h^2 n x^2}{2 d}+\frac{1}{3} A^3 h^2 x^3+\frac{3 a A^2 B g^2 n \text{Log}[a+b x]}{b}-\frac{3 a^2 A^2 B g h n \text{Log}[a+b x]}{b^2}+$$

$$\frac{a^3 A^2 B h^2 n \text{Log}[a+b x]}{b^3}+\frac{6 a^2 A B^2 g h n^2 \text{Log}[a+b x]}{b^2}-\frac{6 a A B^2 c g h n^2 \text{Log}[a+b x]}{b d}-$$

$$\frac{3 a^3 A B^2 h^2 n^2 \text{Log}[a+b x]}{b^3}+\frac{2 a A B^2 c^2 h^2 n^2 \text{Log}[a+b x]}{b d^2}+\frac{a^2 A B^2 c h^2 n^2 \text{Log}[a+b x]}{b^2 d}+$$

$$\frac{6\,a\,B^3\,g^2\,n^3\,\text{Log}[a+b\,x]}{b}+\frac{6\,B^3\,c\,g^2\,n^3\,\text{Log}[a+b\,x]}{d}-\frac{12\,a\,B^3\,c\,g\,h\,n^3\,\text{Log}[a+b\,x]}{b\,d}+$$
$$\frac{a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]}{b^3}+\frac{3\,a\,B^3\,c^2\,h^2\,n^3\,\text{Log}[a+b\,x]}{b\,d^2}-\frac{3\,a\,A\,B^2\,g^2\,n^2\,\text{Log}[a+b\,x]^2}{b}+$$
$$\frac{3\,a^2\,A\,B^2\,g\,h\,n^2\,\text{Log}[a+b\,x]^2}{b^2}-\frac{a^3\,A\,B^2\,h^2\,n^2\,\text{Log}[a+b\,x]^2}{b^3}-\frac{3\,a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]^2}{b^2}+$$
$$\frac{3\,a\,B^3\,c\,g\,h\,n^3\,\text{Log}[a+b\,x]^2}{b\,d}+\frac{3\,a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]^2}{2\,b^3}-\frac{a\,B^3\,c^2\,h^2\,n^3\,\text{Log}[a+b\,x]^2}{b\,d^2}-$$
$$\frac{a^2\,B^3\,c\,h^2\,n^3\,\text{Log}[a+b\,x]^2}{2\,b^2\,d}+\frac{a\,B^3\,g^2\,n^3\,\text{Log}[a+b\,x]^3}{b}-\frac{a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]^3}{b^2}+$$
$$\frac{a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]^3}{3\,b^3}-\frac{3\,A^2\,B\,c\,g^2\,n\,\text{Log}[c+d\,x]}{d}+\frac{3\,A^2\,B\,c^2\,g\,h\,n\,\text{Log}[c+d\,x]}{d^2}-$$
$$\frac{A^2\,B\,c^3\,h^2\,n\,\text{Log}[c+d\,x]}{d^3}+\frac{6\,A\,B^2\,c^2\,g\,h\,n^2\,\text{Log}[c+d\,x]}{d^2}-\frac{6\,a\,A\,B^2\,c\,g\,h\,n^2\,\text{Log}[c+d\,x]}{b\,d}-$$
$$\frac{3\,A\,B^2\,c^3\,h^2\,n^2\,\text{Log}[c+d\,x]}{d^3}+\frac{a\,A\,B^2\,c^2\,h^2\,n^2\,\text{Log}[c+d\,x]}{b\,d^2}+\frac{2\,a^2\,A\,B^2\,c\,h^2\,n^2\,\text{Log}[c+d\,x]}{b^2\,d}-$$
$$\frac{6\,a\,B^3\,g^2\,n^3\,\text{Log}[c+d\,x]}{b}-\frac{6\,B^3\,c\,g^2\,n^3\,\text{Log}[c+d\,x]}{d}+\frac{12\,a\,B^3\,c\,g\,h\,n^3\,\text{Log}[c+d\,x]}{b\,d}-$$
$$\frac{B^3\,c^3\,h^2\,n^3\,\text{Log}[c+d\,x]}{d^3}-\frac{3\,a^2\,B^3\,c\,h^2\,n^3\,\text{Log}[c+d\,x]}{b^2\,d}+\frac{6\,a\,A\,B^2\,g^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b}+$$
$$\frac{6\,A\,B^2\,c\,g^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d}-\frac{6\,a^2\,A\,B^2\,g\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b^2}-$$
$$\frac{6\,A\,B^2\,c^2\,g\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^2}+\frac{2\,a^3\,A\,B^2\,h^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b^3}+$$
$$\frac{2\,A\,B^2\,c^3\,h^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^3}-\frac{6\,B^3\,c^2\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^2}+$$
$$\frac{6\,a\,B^3\,c\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b\,d}+\frac{3\,B^3\,c^3\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{d^3}-$$
$$\frac{a\,B^3\,c^2\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b\,d^2}-\frac{2\,a^2\,B^3\,c\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]}{b^2\,d}-$$
$$\frac{6\,a\,B^3\,g^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{b}-\frac{3\,B^3\,c\,g^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{d}+$$
$$\frac{6\,a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{b^2}+\frac{3\,B^3\,c^2\,g\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{d^2}-$$
$$\frac{2\,a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{b^3}-\frac{B^3\,c^3\,h^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]}{d^3}-$$
$$\frac{6\,a\,A\,B^2\,g^2\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b}+\frac{6\,a^2\,A\,B^2\,g\,h\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b^2}-$$
$$\frac{2\,a^3\,A\,B^2\,h^2\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b^3}+\frac{6\,a\,B^3\,g^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b}-$$
$$\frac{6\,a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]}{b^2}+$$

$$\frac{2\,a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]}{b^3}-\frac{3\,A\,B^2\,c\,g^2\,n^2\,\text{Log}[c+d\,x]^2}{d}+$$
$$\frac{3\,A\,B^2\,c^2\,g\,h\,n^2\,\text{Log}[c+d\,x]^2}{d^2}-\frac{A\,B^2\,c^3\,h^2\,n^2\,\text{Log}[c+d\,x]^2}{d^3}+\frac{3\,B^3\,c^2\,g\,h\,n^3\,\text{Log}[c+d\,x]^2}{d^2}-$$
$$\frac{3\,a\,B^3\,c\,g\,h\,n^3\,\text{Log}[c+d\,x]^2}{b\,d}-\frac{3\,B^3\,c^3\,h^2\,n^3\,\text{Log}[c+d\,x]^2}{2\,d^3}+\frac{a\,B^3\,c^2\,h^2\,n^3\,\text{Log}[c+d\,x]^2}{2\,b\,d^2}+$$
$$\frac{a^2\,B^3\,c\,h^2\,n^3\,\text{Log}[c+d\,x]^2}{b^2\,d}+\frac{3\,a\,B^3\,g^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{b}+$$
$$\frac{6\,B^3\,c\,g^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{d}-\frac{3\,a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{b^2}-$$
$$\frac{6\,B^3\,c^2\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{d^2}+\frac{a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{b^3}+$$
$$\frac{2\,B^3\,c^3\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2}{d^3}-\frac{3\,a\,B^3\,g^2\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]^2}{b}-$$
$$\frac{3\,B^3\,c\,g^2\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]^2}{d}+\frac{3\,a^2\,B^3\,g\,h\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]^2}{b^2}+$$
$$\frac{3\,B^3\,c^2\,g\,h\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]^2}{d^2}-\frac{a^3\,B^3\,h^2\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]^2}{b^3}-$$
$$\frac{B^3\,c^3\,h^2\,n^3\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\,\text{Log}[c+d\,x]^2}{d^3}-\frac{B^3\,c\,g^2\,n^3\,\text{Log}[c+d\,x]^3}{d}+\frac{B^3\,c^2\,g\,h\,n^3\,\text{Log}[c+d\,x]^3}{d^2}-$$
$$\frac{B^3\,c^3\,h^2\,n^3\,\text{Log}[c+d\,x]^3}{3\,d^3}-\frac{6\,A\,B^2\,c\,g^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}+$$
$$\frac{6\,A\,B^2\,c^2\,g\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-\frac{2\,A\,B^2\,c^3\,h^2\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+$$
$$\frac{6\,a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2}+\frac{6\,B^3\,c^2\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-$$
$$\frac{12\,a\,B^3\,c\,g\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b\,d}-\frac{3\,a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}-$$
$$\frac{3\,B^3\,c^3\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}+\frac{3\,a\,B^3\,c^2\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b\,d^2}+$$
$$\frac{3\,a^2\,B^3\,c\,h^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2\,d}+\frac{3\,a\,B^3\,g^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b}+$$
$$\frac{3\,B^3\,c\,g^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}-\frac{3\,a^2\,B^3\,g\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2}-$$
$$\frac{3\,B^3\,c^2\,g\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}+\frac{a^3\,B^3\,h^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}+$$
$$\frac{B^3\,c^3\,h^2\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}-\frac{6\,B^3\,c\,g^2\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}+$$

$$\frac{6 B^3 c^2 g h n^3 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]}{d^2} -$$
$$\frac{2 B^3 c^3 h^2 n^3 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right]}{d^3} - \frac{6 a B^3 g^2 n^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} -$$
$$\frac{6 B^3 c g^2 n^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d} + \frac{12 a B^3 c g h n^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d} -$$
$$\frac{2 a B^3 c^2 h^2 n^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d^2} - \frac{2 a^2 B^3 c h^2 n^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2 d} +$$
$$3 A^2 B g^2 x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right] + \frac{6 a A B^2 g h n x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} -$$
$$\frac{6 A B^2 c g h n x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d} - \frac{2 a^2 A B^2 h^2 n x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} +$$
$$\frac{2 A B^2 c^2 h^2 n x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^2} + \frac{a^2 B^3 h^2 n^2 x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} +$$
$$\frac{B^3 c^2 h^2 n^2 x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^2} - \frac{2 a B^3 c h^2 n^2 x \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d} +$$
$$3 A^2 B g h x^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right] + \frac{a A B^2 h^2 n x^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} -$$
$$\frac{A B^2 c h^2 n x^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d} + A^2 B h^2 x^3 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right] +$$
$$\frac{6 a A B^2 g^2 n \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} -$$
$$\frac{6 a^2 A B^2 g h n \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} +$$
$$\frac{2 a^3 A B^2 h^2 n \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^3} +$$
$$\frac{6 a^2 B^3 g h n^2 \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} -$$
$$\frac{6 a B^3 c g h n^2 \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d} -$$
$$\frac{3 a^3 B^3 h^2 n^2 \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^3} +$$
$$\frac{2 a B^3 c^2 h^2 n^2 \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d^2} +$$
$$\frac{a^2 B^3 c h^2 n^2 \text{Log}[a+b x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2 d} -$$
$$\frac{3 a B^3 g^2 n^2 \text{Log}[a+b x]^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} +$$
$$\frac{3 a^2 B^3 g h n^2 \text{Log}[a+b x]^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} -$$

$$\frac{a^3 B^3 h^2 n^2 \text{Log}[a+b x]^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^3} -$$
$$\frac{6 A B^2 c g^2 n \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d} +$$
$$\frac{6 A B^2 c^2 g h n \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^2} -$$
$$\frac{2 A B^2 c^3 h^2 n \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^3} +$$
$$\frac{6 B^3 c^2 g h n^2 \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^2} -$$
$$\frac{6 a B^3 c g h n^2 \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d} -$$
$$\frac{3 B^3 c^3 h^2 n^2 \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^3} +$$
$$\frac{a B^3 c^2 h^2 n^2 \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b d^2} +$$
$$\frac{2 a^2 B^3 c h^2 n^2 \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2 d} +$$
$$\frac{6 a B^3 g^2 n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} +$$
$$\frac{6 B^3 c g^2 n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d} -$$
$$\frac{6 a^2 B^3 g h n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} -$$
$$\frac{6 B^3 c^2 g h n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^2} +$$
$$\frac{2 a^3 B^3 h^2 n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^3} +$$
$$\frac{2 B^3 c^3 h^2 n^2 \text{Log}[a+b x] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^3} -$$
$$\frac{6 a B^3 g^2 n^2 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b} +$$
$$\frac{6 a^2 B^3 g h n^2 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^2} -$$
$$\frac{2 a^3 B^3 h^2 n^2 \text{Log}\left[\frac{d (a+b x)}{-b c+a d}\right] \text{Log}[c+d x] \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{b^3} -$$
$$\frac{3 B^3 c g^2 n^2 \text{Log}[c+d x]^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d} +$$
$$\frac{3 B^3 c^2 g h n^2 \text{Log}[c+d x]^2 \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]}{d^2} -$$

$$\frac{B^3 c^3 h^2 n^2 \text{Log}[c+d x]^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]}{d^3} -$$
$$\frac{6 B^3 c g^2 n^2 \text{Log}[a+b x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]}{d} +$$
$$\frac{6 B^3 c^2 g h n^2 \text{Log}[a+b x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]}{d^2} -$$
$$\frac{2 B^3 c^3 h^2 n^2 \text{Log}[a+b x] \text{Log}\left[\frac{b (c+d x)}{b c-a d}\right] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]}{d^3} +$$
$$3 A B^2 g^2 x \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2 + \frac{3 a B^3 g h n x \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{b} -$$
$$\frac{3 B^3 c g h n x \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{d} - \frac{a^2 B^3 h^2 n x \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{b^2} +$$
$$\frac{B^3 c^2 h^2 n x \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{d^2} + 3 A B^2 g h x^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2 +$$
$$\frac{a B^3 h^2 n x^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{2 b} - \frac{B^3 c h^2 n x^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{2 d} +$$
$$A B^2 h^2 x^3 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2 + \frac{3 a B^3 g^2 n \text{Log}[a+b x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{b} -$$
$$\frac{3 a^2 B^3 g h n \text{Log}[a+b x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{b^2} +$$
$$\frac{a^3 B^3 h^2 n \text{Log}[a+b x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{b^3} -$$
$$\frac{3 B^3 c g^2 n \text{Log}[c+d x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{d} +$$
$$\frac{3 B^3 c^2 g h n \text{Log}[c+d x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{d^2} -$$
$$\frac{B^3 c^3 h^2 n \text{Log}[c+d x] \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^2}{d^3} + B^3 g^2 x \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^3 +$$
$$B^3 g h x^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^3 + \frac{1}{3} B^3 h^2 x^3 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]^3 -$$
$$\frac{1}{b^3 d^3} B^2 n^2 \left(6 A b^3 c d^2 g^2 - 6 A b^3 c^2 d g h + 2 A b^3 c^3 h^2 - 6 b^3 B c^2 d g h n + 12 a b^2 B c d^2 g h n - \right.$$
$$6 a^2 b B d^3 g h n + 3 b^3 B c^3 h^2 n - 3 a b^2 B c^2 d h^2 n - 3 a^2 b B c d^2 h^2 n + 3 a^3 B d^3 h^2 n - 2 a B d^3$$
$$\left(3 b^2 g^2 - 3 a b g h + a^2 h^2\right) n \text{Log}[a+b x] + 2 b^3 B c \left(3 d^2 g^2 - 3 c d g h + c^2 h^2\right) n \text{Log}[c+d x] +$$
$$6 b^3 B c d^2 g^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] - 6 b^3 B c^2 d g h \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right] +$$
$$\left. 2 b^3 B c^3 h^2 \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right) \text{PolyLog}\left[2, \frac{d (a+b x)}{-b c+a d}\right] - \frac{1}{b^3 d^3} 2 B^2 n^2$$
$$\left(-a B d^3 \left(3 b^2 g^2 - 3 a b g h + a^2 h^2\right) n \text{Log}[a+b x] + b^3 B c \left(3 d^2 g^2 - 3 c d g h + c^2 h^2\right) n \text{Log}[c+d x] + \right.$$
$$\left. a d^3 \left(3 b^2 g^2 - 3 a b g h + a^2 h^2\right) \left(A + B \text{Log}\left[e (a+b x)^n (c+d x)^{-n}\right]\right)\right) \text{PolyLog}\left[2, \frac{b (c+d x)}{b c-a d}\right] -$$

$$\frac{6\,a\,B^3\,g^2\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{b}+\frac{6\,B^3\,c\,g^2\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d}+$$
$$\frac{6\,a^2\,B^3\,g\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{b^2}-\frac{6\,B^3\,c^2\,g\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^2}-$$
$$\frac{2\,a^3\,B^3\,h^2\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{b^3}+\frac{2\,B^3\,c^3\,h^2\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]}{d^3}-$$
$$\frac{6\,a\,B^3\,g^2\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b}+\frac{6\,B^3\,c\,g^2\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d}+$$
$$\frac{6\,a^2\,B^3\,g\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^2}-\frac{6\,B^3\,c^2\,g\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^2}-$$
$$\frac{2\,a^3\,B^3\,h^2\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{b^3}+\frac{2\,B^3\,c^3\,h^2\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]}{d^3}$$

Problem 310: Result more than twice size of optimal antiderivative.

$$\int (g+h\,x)\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3\,dx$$

Optimal (type 4, 466 leaves, 13 steps):

$$-\frac{1}{b^2\,d^2}3\,B^2\,(b\,c-a\,d)^2\,h\,n^2\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)-$$
$$\frac{3\,B\,(b\,c-a\,d)\,h\,n\,(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^2}{2\,b^2\,d}+\frac{1}{2\,b^2\,d^2}$$
$$3\,B\,(b\,c-a\,d)\,(2\,b\,d\,g-b\,c\,h-a\,d\,h)\,n\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^2-$$
$$\frac{(b\,g-a\,h)^2\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3}{2\,b^2\,h}+$$
$$\frac{(g+h\,x)^2\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3}{2\,h}-\frac{3\,B^3\,(b\,c-a\,d)^2\,h\,n^3\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b^2\,d^2}+\frac{1}{b^2\,d^2}$$
$$3\,B^2\,(b\,c-a\,d)\,(2\,b\,d\,g-b\,c\,h-a\,d\,h)\,n^2\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]-$$
$$\frac{3\,B^3\,(b\,c-a\,d)\,(2\,b\,d\,g-b\,c\,h-a\,d\,h)\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b^2\,d^2}$$

Result (type 4, 3919 leaves):

$$\frac{1}{2\,b^2\,d^2}\left(-12\,A\,b^2\,B^2\,c\,d\,g\,n^2-12\,a\,A\,b\,B^2\,d^2\,g\,n^2+12\,a\,A\,b\,B^2\,c\,d\,h\,n^2+12\,a\,b\,B^3\,d^2\,g\,n^3-\right.$$
$$6\,b^2\,B^3\,c^2\,h\,n^3+6\,a\,b\,B^3\,c\,d\,h\,n^3-6\,a^2\,B^3\,d^2\,h\,n^3+2\,A^3\,b^2\,d^2\,g\,x-3\,A^2\,b^2\,B\,c\,d\,h\,n\,x+$$
$$3\,a\,A^2\,b\,B\,d^2\,h\,n\,x+A^3\,b^2\,d^2\,h\,x^2+6\,a\,A^2\,b\,B\,d^2\,g\,n\,\text{Log}\left[a+b\,x\right]-3\,a^2\,A^2\,B\,d^2\,h\,n\,\text{Log}\left[a+b\,x\right]-$$
$$6\,a\,A\,b\,B^2\,c\,d\,h\,n^2\,\text{Log}\left[a+b\,x\right]+6\,a^2\,A\,B^2\,d^2\,h\,n^2\,\text{Log}\left[a+b\,x\right]+12\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}\left[a+b\,x\right]+$$
$$12\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}\left[a+b\,x\right]-12\,a\,b\,B^3\,c\,d\,h\,n^3\,\text{Log}\left[a+b\,x\right]-6\,a\,A\,b\,B^2\,d^2\,g\,n^2\,\text{Log}\left[a+b\,x\right]^2+$$
$$3\,a^2\,A\,B^2\,d^2\,h\,n^2\,\text{Log}\left[a+b\,x\right]^2+3\,a\,b\,B^3\,c\,d\,h\,n^3\,\text{Log}\left[a+b\,x\right]^2-3\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}\left[a+b\,x\right]^2+$$

$$2\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}[a+b\,x]^3 - a^2\,B^3\,d^2\,h\,n^3\,\text{Log}[a+b\,x]^3 - 6\,A^2\,b^2\,B\,c\,d\,g\,n\,\text{Log}[c+d\,x] +$$
$$3\,A^2\,b^2\,B\,c^2\,h\,n\,\text{Log}[c+d\,x] + 6\,A\,b^2\,B^2\,c^2\,h\,n^2\,\text{Log}[c+d\,x] - 6\,a\,A\,b\,B^2\,c\,d\,h\,n^2\,\text{Log}[c+d\,x] -$$
$$12\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}[c+d\,x] - 12\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}[c+d\,x] + 12\,a\,b\,B^3\,c\,d\,h\,n^3\,\text{Log}[c+d\,x] +$$
$$12\,A\,b^2\,B^2\,c\,d\,g\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x] + 12\,a\,A\,b\,B^2\,d^2\,g\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x] -$$
$$6\,A\,b^2\,B^2\,c^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x] - 6\,a^2\,A\,B^2\,d^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x] -$$
$$6\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x] + 6\,a\,b\,B^3\,c\,d\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x] -$$
$$6\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x] - 12\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x] +$$
$$3\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x] + 6\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x] -$$
$$12\,a\,A\,b\,B^2\,d^2\,g\,n^2\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x] + 6\,a^2\,A\,B^2\,d^2\,h\,n^2\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x] +$$
$$12\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x] -$$
$$6\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x] - 6\,A\,b^2\,B^2\,c\,d\,g\,n^2\,\text{Log}[c+d\,x]^2 +$$
$$3\,A\,b^2\,B^2\,c^2\,h\,n^2\,\text{Log}[c+d\,x]^2 + 3\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[c+d\,x]^2 -$$
$$3\,a\,b\,B^3\,c\,d\,h\,n^3\,\text{Log}[c+d\,x]^2 + 12\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2 +$$
$$6\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2 - 6\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2 -$$
$$3\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2 - 6\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2 -$$
$$6\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2 + 3\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2 +$$
$$3\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2 - 2\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}[c+d\,x]^3 +$$
$$b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[c+d\,x]^3 - 12\,A\,b^2\,B^2\,c\,d\,g\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$
$$6\,A\,b^2\,B^2\,c^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 6\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$
$$12\,a\,b\,B^3\,c\,d\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 6\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] +$$
$$6\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 6\,a\,b\,B^3\,d^2\,g\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$
$$3\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 3\,a^2\,B^3\,d^2\,h\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] -$$
$$12\,b^2\,B^3\,c\,d\,g\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] + 6\,b^2\,B^3\,c^2\,h\,n^3\,\text{Log}[a+b\,x]$$
$$\text{Log}[c+d\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big] - 12\,b^2\,B^3\,c\,d\,g\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] -$$
$$12\,a\,b\,B^3\,d^2\,g\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] + 12\,a\,b\,B^3\,c\,d\,h\,n^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] +$$
$$6\,A^2\,b^2\,B\,d^2\,g\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] - 6\,A\,b^2\,B^2\,c\,d\,h\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] +$$
$$6\,a\,A\,b\,B^2\,d^2\,h\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] + 3\,A^2\,b^2\,B\,d^2\,h\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] +$$
$$12\,a\,A\,b\,B^2\,d^2\,g\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] -$$
$$6\,a^2\,A\,B^2\,d^2\,h\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] - 6\,a\,b\,B^3\,c\,d\,h\,n^2\,\text{Log}[a+b\,x]$$
$$\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] + 6\,a^2\,B^3\,d^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] -$$
$$6\,a\,b\,B^3\,d^2\,g\,n^2\,\text{Log}[a+b\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] + 3\,a^2\,B^3\,d^2\,h\,n^2\,\text{Log}[a+b\,x]^2$$
$$\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] - 12\,A\,b^2\,B^2\,c\,d\,g\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right] +$$

$$6\,A\,b^2\,B^2\,c^2\,h\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+6\,b^2\,B^3\,c^2\,h\,n^2\,\text{Log}[c+d\,x]$$
$$\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-6\,a\,b\,B^3\,c\,d\,h\,n^2\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$12\,b^2\,B^3\,c\,d\,g\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$12\,a\,b\,B^3\,d^2\,g\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$6\,b^2\,B^3\,c^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$6\,a^2\,B^3\,d^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$12\,a\,b\,B^3\,d^2\,g\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$6\,a^2\,B^3\,d^2\,h\,n^2\,\text{Log}\left[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$6\,b^2\,B^3\,c\,d\,g\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$3\,b^2\,B^3\,c^2\,h\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]-$$
$$12\,b^2\,B^3\,c\,d\,g\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$6\,b^2\,B^3\,c^2\,h\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\left[\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$6\,A\,b^2\,B^2\,d^2\,g\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-3\,b^2\,B^3\,c\,d\,h\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$3\,a\,b\,B^3\,d^2\,h\,n\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+3\,A\,b^2\,B^2\,d^2\,h\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$6\,a\,b\,B^3\,d^2\,g\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-$$
$$3\,a^2\,B^3\,d^2\,h\,n\,\text{Log}[a+b\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2-$$
$$6\,b^2\,B^3\,c\,d\,g\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$3\,b^2\,B^3\,c^2\,h\,n\,\text{Log}[c+d\,x]\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^2+$$
$$2\,b^2\,B^3\,d^2\,g\,x\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3+b^2\,B^3\,d^2\,h\,x^2\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]^3+6\,B^2\,n^2$$
$$\left(-2\,A\,b^2\,c\,d\,g+A\,b^2\,c^2\,h+b^2\,B\,c^2\,h\,n-2\,a\,b\,B\,c\,d\,h\,n+a^2\,B\,d^2\,h\,n+a\,B\,d^2\,(2\,b\,g-a\,h)\,n\,\text{Log}[a+b\,x]+\right.$$
$$b^2\,B\,c\,(-2\,d\,g+c\,h)\,n\,\text{Log}[c+d\,x]-2\,b^2\,B\,c\,d\,g\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]+$$
$$\left.b^2\,B\,c^2\,h\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$
$$6\,B^2\,n^2\,\left(a\,B\,d^2\,(2\,b\,g-a\,h)\,n\,\text{Log}[a+b\,x]+b^2\,B\,c\,(-2\,d\,g+c\,h)\,n\,\text{Log}[c+d\,x]+\right.$$
$$\left.a\,d^2\,(-2\,b\,g+a\,h)\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\right)\text{PolyLog}\left[2,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+$$
$$12\,b^2\,B^3\,c\,d\,g\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-12\,a\,b\,B^3\,d^2\,g\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]-$$
$$6\,b^2\,B^3\,c^2\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+6\,a^2\,B^3\,d^2\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\right]+$$
$$12\,b^2\,B^3\,c\,d\,g\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-12\,a\,b\,B^3\,d^2\,g\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]-$$
$$\left.6\,b^2\,B^3\,c^2\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]+6\,a^2\,B^3\,d^2\,h\,n^3\,\text{PolyLog}\left[3,\,\frac{b\,(c+d\,x)}{b\,c-a\,d}\right]\right)$$

Problem 311: Result more than twice size of optimal antiderivative.

$$\int\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3\,\mathbb{d}x$$

Optimal (type 4, 203 leaves, 6 steps) :

$$\frac{3\,B\,(b\,c-a\,d)\,n\,\text{Log}\left[\frac{b\,c-a\,d}{b\,(c+d\,x)}\right]\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^2}{b\,d}+$$

$$\frac{(a+b\,x)\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)^3}{b}+\frac{1}{b\,d}$$

$$6\,B^2\,(b\,c-a\,d)\,n^2\,\left(A+B\,\text{Log}\left[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\right]\right)\,\text{PolyLog}\left[2,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]-$$

$$\frac{6\,B^3\,(b\,c-a\,d)\,n^3\,\text{PolyLog}\left[3,\,\frac{d\,(a+b\,x)}{b\,(c+d\,x)}\right]}{b\,d}$$

Result (type 4, 1465 leaves) :

$$-\frac{1}{b\,d}\Big(6\,A\,b\,B^2\,c\,n^2+6\,a\,A\,B^2\,d\,n^2-6\,a\,B^3\,d\,n^3-A^3\,b\,d\,x-3\,a\,A^2\,B\,d\,n\,\text{Log}[a+b\,x]-6\,b\,B^3\,c\,n^3\,\text{Log}[a+b\,x]-$$
$$6\,a\,B^3\,d\,n^3\,\text{Log}[a+b\,x]+3\,a\,A\,B^2\,d\,n^2\,\text{Log}[a+b\,x]^2-a\,B^3\,d\,n^3\,\text{Log}[a+b\,x]^3+$$
$$3\,A^2\,b\,B\,c\,n\,\text{Log}[c+d\,x]+6\,b\,B^3\,c\,n^3\,\text{Log}[c+d\,x]+6\,a\,B^3\,d\,n^3\,\text{Log}[c+d\,x]-$$
$$6\,A\,b\,B^2\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]-6\,a\,A\,B^2\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]+$$
$$3\,b\,B^3\,c\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]+6\,a\,B^3\,d\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}[c+d\,x]+$$
$$6\,a\,A\,B^2\,d\,n^2\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]-6\,a\,B^3\,d\,n^3\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]+$$
$$3\,A\,b\,B^2\,c\,n^2\,\text{Log}[c+d\,x]^2-6\,b\,B^3\,c\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2-$$
$$3\,a\,B^3\,d\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]^2+3\,b\,B^3\,c\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2+$$
$$3\,a\,B^3\,d\,n^3\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]^2+b\,B^3\,c\,n^3\,\text{Log}[c+d\,x]^3+$$
$$6\,A\,b\,B^2\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-3\,b\,B^3\,c\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-$$
$$3\,a\,B^3\,d\,n^3\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+6\,b\,B^3\,c\,n^3\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+$$
$$6\,b\,B^3\,c\,n^2\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]+6\,a\,B^3\,d\,n^2\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]-$$
$$3\,A^2\,b\,B\,d\,x\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]-6\,a\,A\,B^2\,d\,n\,\text{Log}[a+b\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]+$$
$$3\,a\,B^3\,d\,n^2\,\text{Log}[a+b\,x]^2\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]+$$
$$6\,A\,b\,B^2\,c\,n\,\text{Log}[c+d\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]-$$
$$6\,b\,B^3\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]-$$
$$6\,a\,B^3\,d\,n^2\,\text{Log}[a+b\,x]\,\text{Log}[c+d\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]+$$
$$6\,a\,B^3\,d\,n^2\,\text{Log}\Big[\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]\,\text{Log}[c+d\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]+$$
$$3\,b\,B^3\,c\,n^2\,\text{Log}[c+d\,x]^2\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]+$$
$$6\,b\,B^3\,c\,n^2\,\text{Log}[a+b\,x]\,\text{Log}\Big[\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]-$$
$$3\,A\,b\,B^2\,d\,x\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]^2-3\,a\,B^3\,d\,n\,\text{Log}[a+b\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]^2+$$
$$3\,b\,B^3\,c\,n\,\text{Log}[c+d\,x]\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]^2-b\,B^3\,d\,x\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]^3+$$
$$6\,B^2\,n^2\,\big(-a\,B\,d\,n\,\text{Log}[a+b\,x]+b\,c\,\big(A+B\,n\,\text{Log}[c+d\,x]+B\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]\big)\big)$$
$$\text{PolyLog}\Big[2,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+6\,B^2\,n^2\,\big(-a\,B\,d\,n\,\text{Log}[a+b\,x]+b\,B\,c\,n\,\text{Log}[c+d\,x]+$$
$$a\,d\,\big(A+B\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]\big)\big)\,\text{PolyLog}\Big[2,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]-$$
$$6\,b\,B^3\,c\,n^3\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]+6\,a\,B^3\,d\,n^3\,\text{PolyLog}\Big[3,\frac{d\,(a+b\,x)}{-b\,c+a\,d}\Big]-$$
$$6\,b\,B^3\,c\,n^3\,\text{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]+6\,a\,B^3\,d\,n^3\,\text{PolyLog}\Big[3,\frac{b\,(c+d\,x)}{b\,c-a\,d}\Big]\Big)$$

Problem 312: Unable to integrate problem.

$$\int\frac{\big(A+B\,\text{Log}\Big[e\,(a+b\,x)^n\,(c+d\,x)^{-n}\Big]\big)^3}{g+h\,x}\,dx$$

Optimal (type 4, 425 leaves, 12 steps) :

$$-\frac{\text{Log}\left[\frac{b c-a d}{b (c+d x)}\right] \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^3}{h}+\frac{\left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^3 \text{Log}\left[1-\frac{(d g-c h) (a+b x)}{(b g-a h) (c+d x)}\right]}{h}-\frac{3 B n \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^2 \text{PolyLog}\left[2, \frac{d (a+b x)}{b (c+d x)}\right]}{h}+\frac{3 B n \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^2 \text{PolyLog}\left[2, \frac{(d g-c h) (a+b x)}{(b g-a h) (c+d x)}\right]}{h}+\frac{6 B^2 n^2 \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right) \text{PolyLog}\left[3, \frac{d (a+b x)}{b (c+d x)}\right]}{h}-\frac{6 B^2 n^2 \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right) \text{PolyLog}\left[3, \frac{(d g-c h) (a+b x)}{(b g-a h) (c+d x)}\right]}{h}-\frac{6 B^3 n^3 \text{PolyLog}\left[4, \frac{d (a+b x)}{b (c+d x)}\right]}{h}+\frac{6 B^3 n^3 \text{PolyLog}\left[4, \frac{(d g-c h) (a+b x)}{(b g-a h) (c+d x)}\right]}{h}$$

Result (type 8, 35 leaves) :

$$\int \frac{\left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^3}{g+h x} \, dx$$

Problem 313: Unable to integrate problem.

$$\int \frac{\left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^3}{\left(g+h x\right)^2} \, dx$$

Optimal (type 4, 302 leaves, 6 steps) :

$$\frac{\left(a+b x\right) \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^3}{\left(b g-a h\right) \left(g+h x\right)}+\left(3 B \left(b c-a d\right) n \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right)^2 \text{Log}\left[1-\frac{\left(d g-c h\right) \left(a+b x\right)}{\left(b g-a h\right) \left(c+d x\right)}\right]\right) \Big/ \left(\left(b g-a h\right) \left(d g-c h\right)\right)+\left(6 B^2 \left(b c-a d\right) n^2 \left(A+B \text{Log}\left[e \left(a+b x\right)^n \left(c+d x\right)^{-n}\right]\right) \text{PolyLog}\left[2, \frac{\left(d g-c h\right) \left(a+b x\right)}{\left(b g-a h\right) \left(c+d x\right)}\right]\right) \Big/ \left(\left(b g-a h\right) \left(d g-c h\right)\right)-\frac{6 B^3 \left(b c-a d\right) n^3 \text{PolyLog}\left[3, \frac{(d g-c h) (a+b x)}{(b g-a h) (c+d x)}\right]}{\left(b g-a h\right) \left(d g-c h\right)}$$

Result (type 8, 35 leaves) :

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^3}{\left(g + h x\right)^2} \, dx$$

Problem 314: Unable to integrate problem.

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^3}{\left(g + h x\right)^3} \, dx$$

Optimal (type 4, 629 leaves, 13 steps):

$$\frac{3 B \left(b c - a d\right) h n \left(a + b x\right) \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2}{2 \left(b g - a h\right)^2 \left(d g - c h\right) \left(g + h x\right)} +$$

$$\frac{b^2 \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^3}{2 h \left(b g - a h\right)^2} - \frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^3}{2 h \left(g + h x\right)^2} +$$

$$\frac{3 B^2 \left(b c - a d\right)^2 h n^2 \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right) \operatorname{Log}\left[1 - \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{\left(b g - a h\right)^2 \left(d g - c h\right)^2} +$$

$$\frac{3 B \left(b c - a d\right) \left(2 b d g - b c h - a d h\right) n \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^2 \operatorname{Log}\left[1 - \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{2 \left(b g - a h\right)^2 \left(d g - c h\right)^2} +$$

$$\frac{3 B^3 \left(b c - a d\right)^2 h n^3 \operatorname{PolyLog}\left[2, \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{\left(b g - a h\right)^2 \left(d g - c h\right)^2} + \frac{1}{\left(b g - a h\right)^2 \left(d g - c h\right)^2} 3 B^2 \left(b c - a d\right)$$

$$\left(2 b d g - b c h - a d h\right) n^2 \left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right) \operatorname{PolyLog}\left[2, \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right] -$$

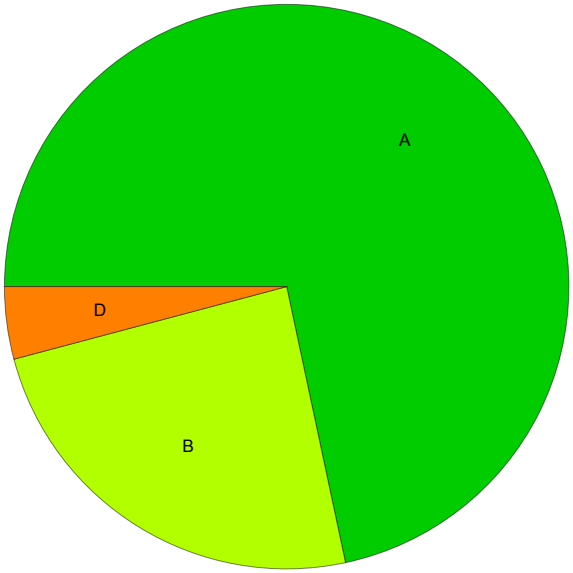
$$\frac{3 B^3 \left(b c - a d\right) \left(2 b d g - b c h - a d h\right) n^3 \operatorname{PolyLog}\left[3, \frac{\left(d g - c h\right) \left(a + b x\right)}{\left(b g - a h\right) \left(c + d x\right)}\right]}{\left(b g - a h\right)^2 \left(d g - c h\right)^2}$$

Result (type 8, 35 leaves):

$$\int \frac{\left(A + B \operatorname{Log}\left[e \left(a + b x\right)^n \left(c + d x\right)^{-n}\right]\right)^3}{\left(g + h x\right)^3} \, dx$$

Summary of Integration Test Results

314 integration problems



A - 225 optimal antiderivatives

B - 76 more than twice size of optimal antiderivatives

C - 0 unnecessarily complex antiderivatives

D - 13 unable to integrate problems

E - 0 integration timeouts