Mathematica 11.3 Integration Test Results

Test results for the 14 problems in "8.7 Zeta function.m"

Problem 7: Unable to integrate problem.

$$\int \left(-\frac{b\,\text{PolyGamma}[2,\,a+b\,x]}{x}+\frac{\text{Zeta}[2,\,a+b\,x]}{x^2}\right)\,dx$$

Optimal (type 4, 12 leaves, 3 steps):

$$-\frac{\text{PolyGamma}[1,\,a+b\,x]}{x}$$

Result (type 8, 27 leaves):

$$\int \left(-\frac{b\,\text{PolyGamma}[2,\,a+b\,x]}{x}+\frac{\text{Zeta}[2,\,a+b\,x]}{x^2}\right)\,dx$$

Problem 14: Unable to integrate problem.

$$\int \left(\frac{\text{Zeta}[s,\,a+b\,x]}{x^2}+\frac{b\,s\,\text{Zeta}[1+s,\,a+b\,x]}{x}\right)\,dx$$

Optimal (type 4, 12 leaves, 2 steps):

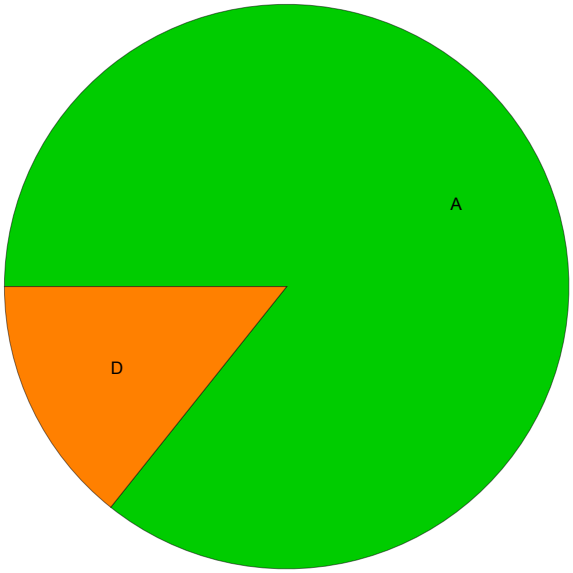
$$-\frac{\text{Zeta}[s,\,a+b\,x]}{x}$$

Result (type 8, 29 leaves):

$$\int \left(\frac{\text{Zeta}[s,\,a+b\,x]}{x^2}+\frac{b\,s\,\text{Zeta}[1+s,\,a+b\,x]}{x}\right)\,dx$$

Summary of Integration Test Results

14 integration problems



A - 12 optimal antiderivatives

B - 0 more than twice size of optimal antiderivatives

C - 0 unnecessarily complex antiderivatives

D - 2 unable to integrate problems

E - 0 integration timeouts