Rubi 4.16.1.4 Integration Test Results

on the problems in the test-suite directory "8 Special functions"

Test results for the 97 problems in "8.10 Formal derivatives.m"

Problem 24: Result valid but suboptimal antiderivative.

$$\int \left(g[x]\, f'[x] + f[x]\, g'[x]\right) dx$$

Optimal (type 9, 5 leaves, ? steps):

```
f[x] g[x]
```

Result (type 9, 19 leaves, 1 step):

```
CannotIntegrate[g[x] f'[x], x] + CannotIntegrate[f[x] g'[x], x]
```

Problem 43: Result valid but suboptimal antiderivative.

$$\int \left(\text{Cos}[x]\, g\left[e^x\right] f'[\text{Sin}[x]] + e^x f[\text{Sin}[x]]\, g'\left[e^x\right]\right) dx$$

Optimal (type 9, 8 leaves, ? steps):

```
f[Sin[x]] g[E^x]
```

Result (type 9, 30 leaves, 1 step):

```
CannotIntegrate[Cos[x] g[E^x] f'[Sin[x]], x] + CannotIntegrate[E^x f[Sin[x]] g'[E^x], x]
```

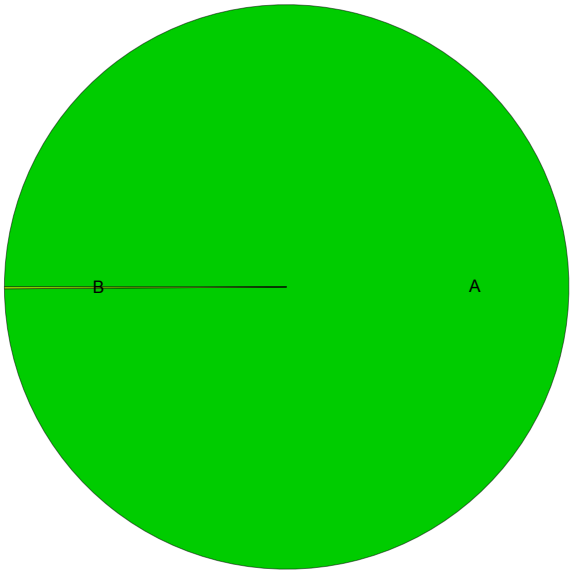
Test results for the 311 problems in "8.1 Error functions.m"

Test results for the 218 problems in "8.2 Fresnel integral functions.m"

Test results for the 208 problems in "8.3 Exponential integral functions.m"

Summary of Integration Test Results

1949 integration problems



A - 1947 optimal antiderivatives

B - 2 valid but suboptimal antiderivatives

C - 0 unnecessarily complex antiderivatives

D - 0 unable to integrate problems

E - 0 integration timeouts

F - 0 invalid antiderivatives