In[76]:=
```
(* Define the function to be integrated *)
f[x_] := (4 x - 3)^3



(* Define the limits of integration *)
a = -3;
b = 5;

(* Define the number of intervals (n) *)
n = 4; (* You can change n as needed *)

(* Trapezoidal Rule *)
trapezoidalRule[f_, a_, b_, n_] := Module[{h, xi, sum},
 h = (b - a) / n;
 sum = f[a] + f[b];
 Print["Sum of f(a) + f(b) for Trapezoidal Rule: ", sum];
 For[i = 1, i < n, i++,
  xi = a + i * h;
  sum = sum + 2 f[xi];
  Print["xi for Trapezoidal Rule (Interval ", i, "): ", xi];
  Print["Sum for Trapezoidal Rule (Interval ", i, "): ", sum];
 ];
 (h / 2) * sum
]

(* Simpson's 1/3 Rule *)
simpsonsOneThirdRule[f_, a_, b_, n_] := Module[{h, xi, sum1, sum2},
 h = (b - a) / n;
 sum1 = f[a] + f[b];
 sum2 = 0;
 Print["Sum of f(a) + f(b) for Simpson's 1/3 Rule: ", sum1];
 For[i = 1, i < n, i++,
  xi = a + i * h;
  If[Mod[i, 2] == 0, sum2 = sum2 + 2 f[xi], sum1 = sum1 + 4 f[xi]];
  Print["xi for Simpson's 1/3 Rule (Interval ", i, "): ", xi];
  Print["Sum for Simpson's 1/3 Rule (Interval ", i, "): ", (h / 3) * (sum1 + sum2)];
 ];
 (h / 3) * (sum1 + sum2)
]
```

```
(* Calculate the results for the specified number of intervals *)
resultTrapezoidal = trapezoidalRule[f, a, b, n];
resultSimpsons = simpsonsOneThirdRule[f, a, b, n];

(* Print the final results *)
Print["Trapezoidal Rule Result: ", resultTrapezoidal];
Print["Simpson's 1/3 Rule Result: ", resultSimpsons];
```

```
Sum of f(a) + f(b) for Trapezoidal Rule: 1538
xi for Trapezoidal Rule (Interval 1): -1
Sum for Trapezoidal Rule (Interval 1): 852
xi for Trapezoidal Rule (Interval 2): 1
Sum for Trapezoidal Rule (Interval 2): 854
xi for Trapezoidal Rule (Interval 3): 3
Sum for Trapezoidal Rule (Interval 3): 2312
Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538
xi for Simpson's 1/3 Rule (Interval 1): -1
Sum for Simpson's 1/3 Rule (Interval 1): 332/3
xi for Simpson's 1/3 Rule (Interval 2): 1
Sum for Simpson's 1/3 Rule (Interval 2): 112
xi for Simpson's 1/3 Rule (Interval 3): 3
Sum for Simpson's 1/3 Rule (Interval 3): 2056
Trapezoidal Rule Result: 2312
Simpson's 1/3 Rule Result: 2056
```

In[86]:=
```
(* Define the function to be integrated *)
f[x_] := (4 x - 3)^3



(* Define the limits of integration *)
a = -3;
b = 5;

(* Create a function to compute the percent relative error *)
percentRelativeError[exact_, approximate_] := Abs[(exact - approximate) / exact] * 100

(* Loop through different values of n and compute the results and errors *)
resultsTrapezoidal = Table[
 n = i;
 resultTrapezoidal = trapezoidalRule[f, a, b, n];
 resultSimpsons = simpsonsOneThirdRule[f, a, b, n];
 exactResult = Integrate[f[x], {x, a, b}];
 errorTrapezoidal = percentRelativeError[exactResult, resultTrapezoidal];
 errorSimpsons = percentRelativeError[exactResult, resultSimpsons];
 {n, resultTrapezoidal, errorTrapezoidal, resultSimpsons, errorSimpsons},
 {i, 2, 100}
]

(* Create a table with the results and errors *)
resultTable =
 Prepend[resultsTrapezoidal, {"n", "Trapezoidal Result",
     "Trapezoidal Error", "Simpsons Result", "Simpsons Error"}];

(* Display the result table *)
Grid[resultTable, Frame → All]

(* Plot the percent relative errors for both methods *)
ListPlot[{resultsTrapezoidal[[All, {1, 3}]], resultsTrapezoidal[[All, {1, 5}]]},
 PlotLegends → {"Trapezoidal Error", "Simpsons Error"},
 FrameLabel → {"Number of Intervals (n)", "Percent Relative Error (%)"},
 PlotRange → All
]
```

```
Sum of f(a) + f(b) for Trapezoidal Rule: 1538
xi for Trapezoidal Rule (Interval 1): 1
```

Sum for Trapezoidal Rule (Interval 1): 1540

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): 1

Sum for Simpson's 1/3 Rule (Interval 1): 2056

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{1}{3}$

Sum for Trapezoidal Rule (Interval 1): $\frac{37\,132}{27}$

xi for Trapezoidal Rule (Interval 2): $\frac{7}{3}$

Sum for Trapezoidal Rule (Interval 2): $\frac{5650}{3}$

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): $-\frac{1}{3}$

Sum for Simpson's 1/3 Rule (Interval 1): $\frac{261\,904}{243}$

xi for Simpson's 1/3 Rule (Interval 2): $\frac{7}{3}$

Sum for Simpson's 1/3 Rule (Interval 2): $\frac{371\,648}{243}$

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): -1

Sum for Trapezoidal Rule (Interval 1): 852

xi for Trapezoidal Rule (Interval 2): 1

Sum for Trapezoidal Rule (Interval 2): 854

xi for Trapezoidal Rule (Interval 3): 3

Sum for Trapezoidal Rule (Interval 3): 2312

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): -1

Sum for Simpson's 1/3 Rule (Interval 1): $\frac{332}{3}$

xi for Simpson's 1/3 Rule (Interval 2): 1

Sum for Simpson's 1/3 Rule (Interval 2): 112

xi for Simpson's 1/3 Rule (Interval 3): 3

Sum for Simpson's 1/3 Rule (Interval 3): 2056

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{7}{5}$

Sum for Trapezoidal Rule (Interval 1): $\frac{33\,236}{125}$

xi for Trapezoidal Rule (Interval 2): $\frac{1}{5}$

Sum for Trapezoidal Rule (Interval 2): $\frac{30\,574}{125}$

xi for Trapezoidal Rule (Interval 3): $\frac{9}{5}$

Sum for Trapezoidal Rule (Interval 3): $\frac{49\,096}{125}$

xi for Trapezoidal Rule (Interval 4): $\frac{17}{5}$

Sum for Trapezoidal Rule (Interval 4): $\frac{13\,874}{5}$

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): $-\frac{7}{5}$

Sum for Simpson's 1/3 Rule (Interval 1): $-\frac{335\,408}{625}$

xi for Simpson's 1/3 Rule (Interval 2): $\frac{1}{5}$

Sum for Simpson's 1/3 Rule (Interval 2): $-\frac{205\,504}{375}$

xi for Simpson's 1/3 Rule (Interval 3): $\frac{9}{5}$

Sum for Simpson's 1/3 Rule (Interval 3): $-\frac{731\,168}{1875}$

xi for Simpson's 1/3 Rule (Interval 4): $\frac{17}{5}$

Sum for Simpson's 1/3 Rule (Interval 4): $\frac{550\,288}{625}$

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{5}{3}$

Sum for Trapezoidal Rule (Interval 1): $-\frac{7252}{27}$

xi for Trapezoidal Rule (Interval 2): $-\frac{1}{3}$

Sum for Trapezoidal Rule (Interval 2): $-\frac{1294}{3}$

xi for Trapezoidal Rule (Interval 3): 1

Sum for Trapezoidal Rule (Interval 3): $-\frac{1288}{3}$

xi for Trapezoidal Rule (Interval 4): $\frac{7}{3}$

Sum for Trapezoidal Rule (Interval 4): $\frac{2126}{27}$

xi for Trapezoidal Rule (Interval 5): $\frac{11}{3}$

Sum for Trapezoidal Rule (Interval 5): $\frac{9764}{3}$

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): $-\frac{5}{3}$

Sum for Simpson's 1/3 Rule (Interval 1): $-\frac{224\,120}{243}$

xi for Simpson's 1/3 Rule (Interval 2): $-\frac{1}{3}$

Sum for Simpson's 1/3 Rule (Interval 2): $-\frac{241\,696}{243}$

xi for Simpson's 1/3 Rule (Interval 3): 1

Sum for Simpson's 1/3 Rule (Interval 3): $-\frac{241\,264}{243}$

xi for Simpson's 1/3 Rule (Interval 4): $\frac{7}{3}$

Sum for Simpson's 1/3 Rule (Interval 4): $-\frac{186\,392}{243}$

xi for Simpson's 1/3 Rule (Interval 5): $\frac{11}{3}$

Sum for Simpson's 1/3 Rule (Interval 5): 2056

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{13}{7}$

Sum for Trapezoidal Rule (Interval 1): $-\frac{250\,500}{343}$

xi for Trapezoidal Rule (Interval 2): $-\frac{5}{7}$

Sum for Trapezoidal Rule (Interval 2): $-\frac{388\,342}{343}$

xi for Trapezoidal Rule (Interval 3): $\frac{3}{7}$

Sum for Trapezoidal Rule (Interval 3): $-\frac{389\,800}{343}$

xi for Trapezoidal Rule (Interval 4): $\frac{11}{7}$

Sum for Trapezoidal Rule (Interval 4): $-\frac{365\,466}{343}$

xi for Trapezoidal Rule (Interval 5): $\frac{19}{7}$

Sum for Trapezoidal Rule (Interval 5): $-\frac{32\,716}{343}$

xi for Trapezoidal Rule (Interval 6): $\frac{27}{7}$

Sum for Trapezoidal Rule (Interval 6): $\frac{26\,210}{7}$

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): $-\frac{13}{7}$

Sum for Simpson's 1/3 Rule (Interval 1): $-\frac{8\,228\,272}{7203}$

xi for Simpson's 1/3 Rule (Interval 2): $-\frac{5}{7}$

Sum for Simpson's 1/3 Rule (Interval 2): $-\frac{3\,110\,336}{2401}$

xi for Simpson's 1/3 Rule (Interval 3): $\frac{3}{7}$

Sum for Simpson's 1/3 Rule (Interval 3): $-\frac{3\,118\,112}{2401}$

xi for Simpson's 1/3 Rule (Interval 4): $\frac{11}{7}$

Sum for Simpson's 1/3 Rule (Interval 4): $-\frac{9\,159\,664}{7203}$

xi for Simpson's 1/3 Rule (Interval 5): $\frac{19}{7}$

Sum for Simpson's 1/3 Rule (Interval 5): $-\frac{547\,952}{1029}$

xi for Simpson's 1/3 Rule (Interval 6): $\frac{27}{7}$

Sum for Simpson's 1/3 Rule (Interval 6): $\frac{6\,700\,384}{7203}$

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): -2

Sum for Trapezoidal Rule (Interval 1): -1124

xi for Trapezoidal Rule (Interval 2): -1

Sum for Trapezoidal Rule (Interval 2): -1810

xi for Trapezoidal Rule (Interval 3): 0

Sum for Trapezoidal Rule (Interval 3): -1864

xi for Trapezoidal Rule (Interval 4): 1

Sum for Trapezoidal Rule (Interval 4): -1862

xi for Trapezoidal Rule (Interval 5): 2

Sum for Trapezoidal Rule (Interval 5): -1612

xi for Trapezoidal Rule (Interval 6): 3

Sum for Trapezoidal Rule (Interval 6): -154

xi for Trapezoidal Rule (Interval 7): 4

Sum for Trapezoidal Rule (Interval 7): 4240

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): -2

Sum for Simpson's 1/3 Rule (Interval 1): -1262

xi for Simpson's 1/3 Rule (Interval 2): -1

Sum for Simpson's 1/3 Rule (Interval 2): $-\frac{4472}{3}$

xi for Simpson's 1/3 Rule (Interval 3): 0

Sum for Simpson's 1/3 Rule (Interval 3): $-\frac{4580}{3}$

xi for Simpson's 1/3 Rule (Interval 4): 1

Sum for Simpson's 1/3 Rule (Interval 4): -1526

xi for Simpson's 1/3 Rule (Interval 5): 2

Sum for Simpson's 1/3 Rule (Interval 5): $-\frac{4078}{3}$

xi for Simpson's 1/3 Rule (Interval 6): 3

Sum for Simpson's 1/3 Rule (Interval 6): $-\frac{2620}{3}$

xi for Simpson's 1/3 Rule (Interval 7): 4

Sum for Simpson's 1/3 Rule (Interval 7): 2056

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{19}{9}$

Sum for Trapezoidal Rule (Interval 1): $-\frac{1\,064\,252}{729}$

xi for Trapezoidal Rule (Interval 2): $-\frac{11}{9}$

Sum for Trapezoidal Rule (Interval 2): $-\frac{197\,786}{81}$

xi for Trapezoidal Rule (Interval 3): $-\frac{1}{3}$

Sum for Trapezoidal Rule (Interval 3): $-\frac{210\,968}{81}$

xi for Trapezoidal Rule (Interval 4): $\frac{5}{9}$

Sum for Trapezoidal Rule (Interval 4): $-\frac{1\,899\,398}{729}$

xi for Trapezoidal Rule (Interval 5): $\frac{13}{9}$

Sum for Trapezoidal Rule (Interval 5): $-\frac{207\,572}{81}$

xi for Trapezoidal Rule (Interval 6): $\frac{7}{3}$

Sum for Trapezoidal Rule (Interval 6): $-\frac{166\,418}{81}$

xi for Trapezoidal Rule (Interval 7): $\frac{29}{9}$

Sum for Trapezoidal Rule (Interval 7): $-\frac{87\,824}{729}$

xi for Trapezoidal Rule (Interval 8): $\frac{37}{9}$

Sum for Trapezoidal Rule (Interval 8): $\frac{42\,658}{9}$

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): $-\frac{19}{9}$

Sum for Simpson's 1/3 Rule (Interval 1): $-\frac{25\,997\,648}{19\,683}$

xi for Simpson's 1/3 Rule (Interval 2): $-\frac{11}{9}$

Sum for Simpson's 1/3 Rule (Interval 2): $-\frac{31\,724\,224}{19\,683}$

xi for Simpson's 1/3 Rule (Interval 3): $-\frac{1}{3}$

Sum for Simpson's 1/3 Rule (Interval 3): $-\frac{33\,622\,432}{19\,683}$

xi for Simpson's 1/3 Rule (Interval 4): $\frac{5}{9}$

Sum for Simpson's 1/3 Rule (Interval 4): $-\frac{33\,627\,920}{19\,683}$

xi for Simpson's 1/3 Rule (Interval 5): $\frac{13}{9}$

Sum for Simpson's 1/3 Rule (Interval 5): $-\frac{1\,226\,960}{729}$

xi for Simpson's 1/3 Rule (Interval 6): $\frac{7}{3}$

Sum for Simpson's 1/3 Rule (Interval 6): $-\frac{1\,117\,216}{729}$

xi for Simpson's 1/3 Rule (Interval 7): $\frac{29}{9}$

Sum for Simpson's 1/3 Rule (Interval 7): $-\frac{7\,605\,824}{19\,683}$

xi for Simpson's 1/3 Rule (Interval 8): $\frac{37}{9}$

Sum for Simpson's 1/3 Rule (Interval 8): $\frac{20\,739\,152}{19\,683}$

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{11}{5}$

Sum for Trapezoidal Rule (Interval 1): $-\frac{218\,508}{125}$

xi for Trapezoidal Rule (Interval 2): $-\frac{7}{5}$

Sum for Trapezoidal Rule (Interval 2): $-\frac{377\,522}{125}$

xi for Trapezoidal Rule (Interval 3): $-\frac{3}{5}$

Sum for Trapezoidal Rule (Interval 3): $-\frac{416\,888}{125}$

xi for Trapezoidal Rule (Interval 4): $\frac{1}{5}$

Sum for Trapezoidal Rule (Interval 4): $-\frac{16\,782}{5}$

xi for Trapezoidal Rule (Interval 5): 1

Sum for Trapezoidal Rule (Interval 5): $-\frac{16\,772}{5}$

xi for Trapezoidal Rule (Interval 6): $\frac{9}{5}$

Sum for Trapezoidal Rule (Interval 6): $-\frac{400\,778}{125}$

xi for Trapezoidal Rule (Interval 7): $\frac{13}{5}$

Sum for Trapezoidal Rule (Interval 7): $-\frac{299\,472}{125}$

xi for Trapezoidal Rule (Interval 8): $\frac{17}{5}$

Sum for Trapezoidal Rule (Interval 8): $-\frac{1718}{125}$

xi for Trapezoidal Rule (Interval 9): $\frac{21}{5}$

Sum for Trapezoidal Rule (Interval 9): $\frac{26\,212}{5}$

Sum of f(a) + f(b) for Simpson's 1/3 Rule: 1538

xi for Simpson's 1/3 Rule (Interval 1): $-\frac{11}{5}$

Sum for Simpson's 1/3 Rule (Interval 1): $-\frac{2\,517\,064}{1875}$

xi for Simpson's 1/3 Rule (Interval 2): $-\frac{7}{5}$

Sum for Simpson's 1/3 Rule (Interval 2): $-\frac{210\,208}{125}$

xi for Simpson's 1/3 Rule (Interval 3): $-\frac{3}{5}$

Sum for Simpson's 1/3 Rule (Interval 3): $-\frac{1\,156\,016}{625}$

xi for Simpson's 1/3 Rule (Interval 4): $\frac{1}{5}$

Sum for Simpson's 1/3 Rule (Interval 4): $-\frac{3\,478\,696}{1875}$

xi for Simpson's 1/3 Rule (Interval 5): 1

Sum for Simpson's 1/3 Rule (Interval 5): $-\frac{3\,476\,696}{1875}$

xi for Simpson's 1/3 Rule (Interval 6): $\frac{9}{5}$

Sum for Simpson's 1/3 Rule (Interval 6): $-\frac{3\,402\,608}{1875}$

xi for Simpson's 1/3 Rule (Interval 7): $\frac{13}{5}$

Sum for Simpson's 1/3 Rule (Interval 7): $-\frac{518\,432}{375}$

xi for Simpson's 1/3 Rule (Interval 8): $\frac{17}{5}$

Sum for Simpson's 1/3 Rule (Interval 8): $-\frac{467\,048}{625}$

xi for Simpson's 1/3 Rule (Interval 9): $\frac{21}{5}$

Sum for Simpson's 1/3 Rule (Interval 9): 2056

Sum of f(a) + f(b) for Trapezoidal Rule: 1538

xi for Trapezoidal Rule (Interval 1): $-\frac{25}{11}$

Sum for Trapezoidal Rule (Interval 1): $-\frac{2\,658\,196}{1331}$

Out[90]=

$$\left\{\left\{2, 3080, \frac{12\,800}{257}, 2056, 0\right\},\right.$$
$$\left\{3, \frac{22\,600}{9}, \frac{51\,200}{2313}, \frac{371\,648}{243}, \frac{1\,599\,500}{62\,451}\right\}, \left\{4, 2312, \frac{3200}{257}, 2056, 0\right\},$$
$$\left\{5, \frac{55\,496}{25}, \frac{2048}{257}, \frac{550\,288}{625}, \frac{367\,356}{6425}\right\}, \left\{6, \frac{19\,528}{9}, \frac{12\,800}{2313}, 2056, 0\right\},$$
$$\left\{7, \frac{104\,840}{49}, \frac{51\,200}{12\,593}, \frac{6\,700\,384}{7203}, \frac{101\,362\,300}{1\,851\,171}\right\}, \left\{8, 2120, \frac{800}{257}, 2056, 0\right\},$$
$$\left\{9, \frac{170\,632}{81}, \frac{51\,200}{20\,817}, \frac{20\,739\,152}{19\,683}, \frac{246\,613\,700}{5\,058\,531}\right\}, \left\{10, \frac{52\,424}{25}, \frac{512}{257}, 2056, 0\right\},$$
$$\left\{11, \frac{252\,872}{121}, \frac{51\,200}{31\,097}, \frac{17\,118\,208}{14\,641}, \frac{162\,296\,100}{3\,762\,737}\right\}, \left\{12, \frac{18\,760}{9}, \frac{3200}{2313}, 2056, 0\right\},$$
$$\left\{13, \frac{351\,560}{169}, \frac{51\,200}{43\,433}, \frac{108\,502\,768}{85\,683}, \frac{845\,768\,500}{22\,020\,531}\right\}, \left\{14, \frac{101\,768}{49}, \frac{12\,800}{12\,593}, 2056, 0\right\},$$
$$\left\{15, \frac{466\,696}{225}, \frac{2048}{2313}, \frac{204\,508\,064}{151\,875}, \frac{53\,873\,468}{1\,561\,275}\right\}, \left\{16, 2072, \frac{200}{257}, 2056, 0\right\},$$
$$\left\{17, \frac{598\,280}{289}, \frac{51\,200}{74\,273}, \frac{118\,021\,168}{83\,521}, \frac{671\,225\,100}{21\,464\,897}\right\}, \left\{18, \frac{167\,560}{81}, \frac{12\,800}{20\,817}, 2056, 0\right\},$$
$$\left\{19, \frac{746\,312}{361}, \frac{51\,200}{92\,777}, \frac{574\,230\,592}{390\,963}, \frac{2\,869\,866\,700}{100\,477\,491}\right\}, \left\{20, \frac{51\,656}{25}, \frac{128}{257}, 2056, 0\right\},$$
$$\left\{21, \frac{910\,792}{441}, \frac{51\,200}{113\,337}, \frac{884\,439\,344}{583\,443}, \frac{3\,938\,993\,300}{149\,944\,851}\right\}, \left\{22, \frac{249\,800}{121}, \frac{12\,800}{31\,097}, 2056, 0\right\},$$
$$\left\{23, \frac{1\,091\,720}{529}, \frac{51\,200}{135\,953}, \frac{435\,496\,096}{279\,841}, \frac{1\,748\,212\,500}{71\,919\,137}\right\}, \left\{24, \frac{18\,568}{9}, \frac{800}{2313}, 2056, 0\right\},$$
$$\left\{25, \frac{1\,289\,096}{625}, \frac{2048}{6425}, \frac{1\,864\,544\,464}{1\,171\,875}, \frac{272\,415\,268}{12\,046\,875}\right\}, \left\{26, \frac{348\,488}{169}, \frac{12\,800}{43\,433}, 2056, 0\right\},$$
$$\left\{27, \frac{1\,502\,920}{729}, \frac{51\,200}{187\,353}, \frac{2\,585\,143\,424}{1\,594\,323}, \frac{8\,659\,808\,300}{409\,741\,011}\right\}, \left\{28, \frac{101\,000}{49}, \frac{3200}{12\,593}, 2056, 0\right\},$$
$$\left\{29, \frac{1\,733\,192}{841}, \frac{51\,200}{216\,137}, \frac{1\,165\,729\,744}{707\,281}, \frac{3\,605\,499\,900}{181\,771\,217}\right\}, \left\{30, \frac{463\,624}{225}, \frac{512}{2313}, 2056, 0\right\},$$
$$\left\{31, \frac{1\,979\,912}{961}, \frac{51\,200}{246\,977}, \frac{4\,631\,954\,464}{2\,770\,563}, \frac{13\,304\,038\,300}{712\,034\,691}\right\}, \left\{32, 2060, \frac{50}{257}, 2056, 0\right\},$$

$$\left\{33, \frac{2\,243\,080}{1089}, \frac{51\,200}{279\,873}, \frac{6\,023\,080\,208}{3\,557\,763}, \frac{16\,146\,006\,500}{914\,345\,091}\right\}, \left\{34, \frac{595\,208}{289}, \frac{12\,800}{74\,273}, 2056, 0\right\},$$
$$\left\{35, \frac{2\,522\,696}{1225}, \frac{2048}{12\,593}, \frac{2\,568\,858\,688}{1\,500\,625}, \frac{258\,213\,156}{15\,426\,425}\right\}, \left\{36, \frac{166\,792}{81}, \frac{3200}{20\,817}, 2056, 0\right\},$$
$$\left\{37, \frac{2\,818\,760}{1369}, \frac{51\,200}{351\,833}, \frac{9\,720\,820\,144}{5\,622\,483}, \frac{22\,987\,561\,300}{1\,444\,978\,131}\right\}, \left\{38, \frac{743\,240}{361}, \frac{12\,800}{92\,777}, 2056, 0\right\},$$
$$\left\{39, \frac{3\,131\,272}{1521}, \frac{51\,200}{390\,897}, \frac{12\,106\,559\,072}{6\,940\,323}, \frac{27\,034\,312\,700}{1\,783\,663\,011}\right\}, \left\{40, \frac{51\,464}{25}, \frac{32}{257}, 2056, 0\right\},$$
$$\left\{41, \frac{3\,460\,232}{1681}, \frac{51\,200}{432\,017}, \frac{4\,968\,969\,328}{2\,825\,761}, \frac{10\,509\,941\,100}{726\,220\,577}\right\}, \left\{42, \frac{907\,720}{441}, \frac{12\,800}{113\,337}, 2056, 0\right\},$$
$$\left\{43, \frac{3\,805\,640}{1849}, \frac{51\,200}{475\,193}, \frac{18\,167\,350\,528}{10\,256\,403}, \frac{36\,497\,675\,500}{2\,635\,895\,571}\right\}, \left\{44, \frac{249\,032}{121}, \frac{3200}{31\,097}, 2056, 0\right\},$$
$$\left\{45, \frac{4\,167\,496}{2025}, \frac{2048}{20\,817}, \frac{21\,935\,738\,864}{12\,301\,875}, \frac{1\,678\,458\,068}{126\,463\,275}\right\}, \left\{46, \frac{1\,088\,648}{529}, \frac{12\,800}{135\,953}, 2056, 0\right\},$$
$$\left\{47, \frac{4\,545\,800}{2209}, \frac{51\,200}{567\,713}, \frac{8\,754\,097\,888}{4\,879\,681}, \frac{15\,981\,578\,100}{1\,254\,078\,017}\right\}, \left\{48, \frac{18\,520}{9}, \frac{200}{2313}, 2056, 0\right\},$$
$$\left\{49, \frac{4\,940\,552}{2401}, \frac{51\,200}{617\,057}, \frac{31\,199\,604\,112}{17\,294\,403}, \frac{54\,471\,105\,700}{4\,444\,661\,571}\right\}, \left\{50, \frac{1\,286\,024}{625}, \frac{512}{6425}, 2056, 0\right\},$$
$$\left\{51, \frac{5\,351\,752}{2601}, \frac{51\,200}{668\,457}, \frac{36\,802\,627\,904}{20\,295\,603}, \frac{61\,564\,148\,300}{5\,215\,969\,971}\right\}, \left\{52, \frac{347\,720}{169}, \frac{3200}{43\,433}, 2056, 0\right\},$$
$$\left\{53, \frac{5\,779\,400}{2809}, \frac{51\,200}{721\,913}, \frac{14\,376\,230\,416}{7\,890\,481}, \frac{23\,082\,481\,500}{2\,027\,853\,617}\right\}, \left\{54, \frac{1\,499\,848}{729}, \frac{12\,800}{187\,353}, 2056, 0\right\},$$
$$\left\{55, \frac{6\,223\,496}{3025}, \frac{2048}{31\,097}, \frac{50\,237\,488\,864}{27\,451\,875}, \frac{3\,101\,783\,068}{282\,205\,275}\right\}, \left\{56, \frac{100\,808}{49}, \frac{800}{12\,593}, 2056, 0\right\},$$
$$\left\{57, \frac{6\,684\,040}{3249}, \frac{51\,200}{834\,993}, \frac{58\,191\,083\,984}{31\,668\,003}, \frac{86\,479\,127\,300}{8\,138\,676\,771}\right\}, \left\{58, \frac{1\,730\,120}{841}, \frac{12\,800}{216\,137}, 2056, 0\right\},$$
$$\left\{59, \frac{7\,161\,032}{3481}, \frac{51\,200}{894\,617}, \frac{22\,351\,302\,784}{12\,117\,361}, \frac{32\,024\,892\,900}{3\,114\,161\,777}\right\}, \left\{60, \frac{462\,856}{225}, \frac{128}{2313}, 2056, 0\right\},$$
$$\left\{61, \frac{7\,654\,472}{3721}, \frac{51\,200}{956\,297}, \frac{76\,892\,762\,224}{41\,537\,523}, \frac{106\,354\,813\,300}{10\,675\,143\,411}\right\}, \left\{62, \frac{1\,976\,840}{961}, \frac{12\,800}{246\,977}, 2056, 0\right\},$$
$$\left\{63, \frac{8\,164\,360}{3969}, \frac{51\,200}{1\,020\,033}, \frac{87\,776\,814\,368}{47\,258\,883}, \frac{117\,343\,113\,500}{12\,145\,532\,931}\right\}, \left\{64, 2057, \frac{25}{514}, 2056, 0\right\},$$
$$\left\{65, \frac{8\,690\,696}{4225}, \frac{2048}{43\,433}, \frac{33\,259\,200\,688}{17\,850\,625}, \frac{1\,720\,842\,156}{183\,504\,425}\right\}, \left\{66, \frac{2\,240\,008}{1089}, \frac{12\,800}{279\,873}, 2056, 0\right\},$$
$$\left\{67, \frac{9\,233\,480}{4489}, \frac{51\,200}{1\,153\,673}, \frac{112\,969\,031\,104}{60\,453\,363}, \frac{141\,538\,540\,300}{15\,536\,514\,291}\right\}, \left\{68, \frac{594\,440}{289}, \frac{3200}{74\,273}, 2056, 0\right\},$$
$$\left\{69, \frac{9\,792\,712}{4761}, \frac{51\,200}{1\,223\,577}, \frac{127\,427\,375\,792}{68\,001\,363}, \frac{154\,792\,831\,700}{17\,476\,350\,291}\right\}, \left\{70, \frac{2\,519\,624}{1225}, \frac{512}{12\,593}, 2056, 0\right\},$$
$$\left\{71, \frac{10\,368\,392}{5041}, \frac{51\,200}{1\,295\,537}, \frac{47\,743\,759\,648}{25\,411\,681}, \frac{56\,283\,206\,100}{6\,530\,802\,017}\right\}, \left\{72, \frac{166\,600}{81}, \frac{800}{20\,817}, 2056, 0\right\},$$
$$\left\{73, \frac{10\,960\,520}{5329}, \frac{51\,200}{1\,369\,553}, \frac{160\,461\,751\,888}{85\,194\,723}, \frac{183\,732\,482\,500}{21\,895\,043\,811}\right\},$$
$$\left\{74, \frac{2\,815\,688}{1369}, \frac{12\,800}{351\,833}, 2056, 0\right\},$$

$$\left\{75, \frac{11\,569\,096}{5625}, \frac{2048}{57\,825}, \frac{179\,202\,174\,464}{94\,921\,875}, \frac{7\,978\,600\,268}{975\,796\,875}\right\}, \left\{76, \frac{742\,472}{361}, \frac{3200}{92\,777}, 2056, 0\right\},$$
$$\left\{77, \frac{12\,194\,120}{5929}, \frac{51\,200}{1\,523\,753}, \frac{66\,512\,765\,008}{35\,153\,041}, \frac{72\,023\,591\,100}{9\,034\,331\,537}\right\}, \left\{78, \frac{3\,128\,200}{1521}, \frac{12\,800}{390\,897}, 2056, 0\right\},$$
$$\left\{79, \frac{12\,835\,592}{6241}, \frac{51\,200}{1\,603\,937}, \frac{221\,558\,230\,432}{116\,850\,243}, \frac{233\,573\,364\,700}{30\,030\,512\,451}\right\},$$
$$\left\{80, \frac{51\,416}{25}, \frac{8}{257}, 2056, 0\right\}, \left\{81, \frac{13\,493\,512}{6561}, \frac{51\,200}{1\,686\,177}, \frac{245\,352\,466\,064}{129\,140\,163}, \frac{251\,996\,363\,300}{33\,189\,021\,891}\right\},$$
$$\left\{82, \frac{3\,457\,160}{1681}, \frac{12\,800}{432\,017}, 2056, 0\right\},$$
$$\left\{83, \frac{14\,167\,880}{6889}, \frac{51\,200}{1\,770\,473}, \frac{90\,337\,951\,936}{47\,458\,321}, \frac{90\,454\,450\,500}{12\,196\,788\,497}\right\}, \left\{84, \frac{906\,952}{441}, \frac{3200}{113\,337}, 2056, 0\right\},$$
$$\left\{85, \frac{14\,858\,696}{7225}, \frac{2048}{74\,273}, \frac{298\,637\,622\,064}{156\,601\,875}, \frac{11\,667\,916\,468}{1\,609\,867\,275}\right\}, \left\{86, \frac{3\,802\,568}{1849}, \frac{12\,800}{475\,193}, 2056, 0\right\},$$
$$\left\{87, \frac{15\,565\,960}{7569}, \frac{51\,200}{1\,945\,233}, \frac{328\,321\,355\,744}{171\,869\,283}, \frac{313\,023\,626\,300}{44\,170\,405\,731}\right\},$$
$$\left\{88, \frac{248\,840}{121}, \frac{800}{31\,097}, 2056, 0\right\}, \left\{89, \frac{16\,289\,672}{7921}, \frac{51\,200}{2\,035\,697}, \frac{120\,055\,005\,424}{62\,742\,241}, \frac{111\,788\,025\,900}{16\,124\,755\,937}\right\},$$
$$\left\{90, \frac{4\,164\,424}{2025}, \frac{512}{20\,817}, 2056, 0\right\}, \left\{91, \frac{17\,029\,832}{8281}, \frac{51\,200}{2\,128\,217},\right.$$
$$\left.\frac{394\,270\,931\,584}{205\,724\,883}, \frac{358\,742\,848\,300}{52\,871\,294\,931}\right\}, \left\{92, \frac{1\,087\,880}{529}, \frac{3200}{135\,953}, 2056, 0\right\},$$
$$\left\{93, \frac{17\,786\,440}{8649}, \frac{51\,200}{2\,222\,793}, \frac{430\,743\,798\,128}{224\,415\,603}, \frac{383\,183\,520\,500}{57\,674\,809\,971}\right\},$$
$$\left\{94, \frac{4\,542\,728}{2209}, \frac{12\,800}{567\,713}, 2056, 0\right\}, \left\{95, \frac{18\,559\,496}{9025}, \frac{2048}{92\,777}, \frac{156\,563\,560\,288}{81\,450\,625}, \frac{5\,449\,462\,356}{837\,312\,425}\right\},$$
$$\left\{96, \frac{18\,508}{9}, \frac{50}{2313}, 2056, 0\right\}, \left\{97, \frac{19\,349\,000}{9409}, \frac{51\,200}{2\,418\,113}, \frac{511\,221\,013\,264}{265\,587\,843}, \frac{435\,344\,899\,300}{68\,256\,075\,651}\right\},$$
$$\left\{98, \frac{4\,937\,480}{2401}, \frac{12\,800}{617\,057}, 2056, 0\right\}, \left\{99, \frac{20\,154\,952}{9801}, \frac{51\,200}{2\,518\,857},\right.$$
$$\left.\frac{555\,446\,597\,312}{288\,178\,803}, \frac{463\,112\,770\,700}{74\,061\,952\,371}\right\}, \left\{100, \frac{1\,285\,256}{625}, \frac{128}{6425}, 2056, 0\right\}\}$$

Out[92]=

n	Trapezoidal Result	Trapezoidal Error	Simpsons Result	Simpsons Error
2	3080	$\frac{12\,800}{257}$	2056	0
3	$\frac{22\,600}{9}$	$\frac{51\,200}{2313}$	$\frac{371\,648}{243}$	$\frac{1\,599\,500}{62\,451}$
4	2312	$\frac{3200}{257}$	2056	0
5	$\frac{55\,496}{25}$	$\frac{2048}{257}$	$\frac{550\,288}{625}$	$\frac{367\,356}{6425}$
6	$\frac{19\,528}{9}$	$\frac{12\,800}{2313}$	2056	0
7	$\frac{104\,840}{49}$	$\frac{51\,200}{12\,593}$	$\frac{6\,700\,384}{7203}$	$\frac{101\,362\,300}{1\,851\,171}$
8	2120	$\frac{800}{257}$	2056	0
9	$\frac{170\,632}{81}$	$\frac{51\,200}{20\,817}$	$\frac{20\,739\,152}{19\,683}$	$\frac{246\,613\,700}{5\,058\,531}$

10	$\frac{52\,424}{25}$	$\frac{512}{257}$	2056	0
11	$\frac{252\,872}{121}$	$\frac{51\,200}{31\,097}$	$\frac{17\,118\,208}{14\,641}$	$\frac{162\,296\,100}{3\,762\,737}$
12	$\frac{18\,760}{9}$	$\frac{3200}{2313}$	2056	0
13	$\frac{351\,560}{169}$	$\frac{51\,200}{43\,433}$	$\frac{108\,502\,768}{85\,683}$	$\frac{845\,768\,500}{22\,020\,531}$
14	$\frac{101\,768}{49}$	$\frac{12\,800}{12\,593}$	2056	0
15	$\frac{466\,696}{225}$	$\frac{2048}{2313}$	$\frac{204\,508\,064}{151\,875}$	$\frac{53\,873\,468}{1\,561\,275}$
16	2072	$\frac{200}{257}$	2056	0
17	$\frac{598\,280}{289}$	$\frac{51\,200}{74\,273}$	$\frac{118\,021\,168}{83\,521}$	$\frac{671\,225\,100}{21\,464\,897}$
18	$\frac{167\,560}{81}$	$\frac{12\,800}{20\,817}$	2056	0
19	$\frac{746\,312}{361}$	$\frac{51\,200}{92\,777}$	$\frac{574\,230\,592}{390\,963}$	$\frac{2\,869\,866\,700}{100\,477\,491}$
20	$\frac{51\,656}{25}$	$\frac{128}{257}$	2056	0
21	$\frac{910\,792}{441}$	$\frac{51\,200}{113\,337}$	$\frac{884\,439\,344}{583\,443}$	$\frac{3\,938\,993\,300}{149\,944\,851}$
22	$\frac{249\,800}{121}$	$\frac{12\,800}{31\,097}$	2056	0
23	$\frac{1\,091\,720}{529}$	$\frac{51\,200}{135\,953}$	$\frac{435\,496\,096}{279\,841}$	$\frac{1\,748\,212\,500}{71\,919\,137}$
24	$\frac{18\,568}{9}$	$\frac{800}{2313}$	2056	0
25	$\frac{1\,289\,096}{625}$	$\frac{2048}{6425}$	$\frac{1\,864\,544\,464}{1\,171\,875}$	$\frac{272\,415\,268}{12\,046\,875}$
26	$\frac{348\,488}{169}$	$\frac{12\,800}{43\,433}$	2056	0
27	$\frac{1\,502\,920}{729}$	$\frac{51\,200}{187\,353}$	$\frac{2\,585\,143\,424}{1\,594\,323}$	$\frac{8\,659\,808\,300}{409\,741\,011}$
28	$\frac{101\,000}{49}$	$\frac{3200}{12\,593}$	2056	0
29	$\frac{1\,733\,192}{841}$	$\frac{51\,200}{216\,137}$	$\frac{1\,165\,729\,744}{707\,281}$	$\frac{3\,605\,499\,900}{181\,771\,217}$
30	$\frac{463\,624}{225}$	$\frac{512}{2313}$	2056	0
31	$\frac{1\,979\,912}{961}$	$\frac{51\,200}{246\,977}$	$\frac{4\,631\,954\,464}{2\,770\,563}$	$\frac{13\,304\,038\,300}{712\,034\,691}$
32	2060	$\frac{50}{257}$	2056	0
33	$\frac{2\,243\,080}{1089}$	$\frac{51\,200}{279\,873}$	$\frac{6\,023\,080\,208}{3\,557\,763}$	$\frac{16\,146\,006\,500}{914\,345\,091}$
34	$\frac{595\,208}{289}$	$\frac{12\,800}{74\,273}$	2056	0
35	$\frac{2\,522\,696}{1225}$	$\frac{2048}{12\,593}$	$\frac{2\,568\,858\,688}{1\,500\,625}$	$\frac{258\,213\,156}{15\,426\,425}$
36	$\frac{166\,792}{81}$	$\frac{3200}{20\,817}$	2056	0
37	$\frac{2\,818\,760}{1369}$	$\frac{51\,200}{351\,833}$	$\frac{9\,720\,820\,144}{5\,622\,483}$	$\frac{22\,987\,561\,300}{1\,444\,978\,131}$
38	$\frac{743\,240}{361}$	$\frac{12\,800}{92\,777}$	2056	0
39	$\frac{3\,131\,272}{1521}$	$\frac{51\,200}{390\,897}$	$\frac{12\,106\,559\,072}{6\,940\,323}$	$\frac{27\,034\,312\,700}{1\,783\,663\,011}$
40	$\frac{51\,464}{25}$	$\frac{32}{257}$	2056	0
41	$\frac{3\,460\,232}{1681}$	$\frac{51\,200}{432\,017}$	$\frac{4\,968\,969\,328}{2\,825\,761}$	$\frac{10\,509\,941\,100}{726\,220\,577}$
42	$\frac{907\,720}{441}$	$\frac{12\,800}{113\,337}$	2056	0
43	$\frac{3\,805\,640}{1849}$	$\frac{51\,200}{475\,193}$	$\frac{18\,167\,350\,528}{10\,256\,403}$	$\frac{36\,497\,675\,500}{2\,635\,895\,571}$
44	$\frac{249\,032}{121}$	$\frac{3200}{31\,097}$	2056	0

45	$\frac{4\,167\,496}{2025}$	$\frac{2048}{20\,817}$	$\frac{21\,935\,738\,864}{12\,301\,875}$	$\frac{1\,678\,458\,068}{126\,463\,275}$
46	$\frac{1\,088\,648}{529}$	$\frac{12\,800}{135\,953}$	2056	0
47	$\frac{4\,545\,800}{2209}$	$\frac{51\,200}{567\,713}$	$\frac{8\,754\,097\,888}{4\,879\,681}$	$\frac{15\,981\,578\,100}{1\,254\,078\,017}$
48	$\frac{18\,520}{9}$	$\frac{200}{2313}$	2056	0
49	$\frac{4\,940\,552}{2401}$	$\frac{51\,200}{617\,057}$	$\frac{31\,199\,604\,112}{17\,294\,403}$	$\frac{54\,471\,105\,700}{4\,444\,661\,571}$
50	$\frac{1\,286\,024}{625}$	$\frac{512}{6425}$	2056	0
51	$\frac{5\,351\,752}{2601}$	$\frac{51\,200}{668\,457}$	$\frac{36\,802\,627\,904}{20\,295\,603}$	$\frac{61\,564\,148\,300}{5\,215\,969\,971}$
52	$\frac{347\,720}{169}$	$\frac{3200}{43\,433}$	2056	0
53	$\frac{5\,779\,400}{2809}$	$\frac{51\,200}{721\,913}$	$\frac{14\,376\,230\,416}{7\,890\,481}$	$\frac{23\,082\,481\,500}{2\,027\,853\,617}$
54	$\frac{1\,499\,848}{729}$	$\frac{12\,800}{187\,353}$	2056	0
55	$\frac{6\,223\,496}{3025}$	$\frac{2048}{31\,097}$	$\frac{50\,237\,488\,864}{27\,451\,875}$	$\frac{3\,101\,783\,068}{282\,205\,275}$
56	$\frac{100\,808}{49}$	$\frac{800}{12\,593}$	2056	0
57	$\frac{6\,684\,040}{3249}$	$\frac{51\,200}{834\,993}$	$\frac{58\,191\,083\,984}{31\,668\,003}$	$\frac{86\,479\,127\,300}{8\,138\,676\,771}$
58	$\frac{1\,730\,120}{841}$	$\frac{12\,800}{216\,137}$	2056	0
59	$\frac{7\,161\,032}{3481}$	$\frac{51\,200}{894\,617}$	$\frac{22\,351\,302\,784}{12\,117\,361}$	$\frac{32\,024\,892\,900}{3\,114\,161\,777}$
60	$\frac{462\,856}{225}$	$\frac{128}{2313}$	2056	0
61	$\frac{7\,654\,472}{3721}$	$\frac{51\,200}{956\,297}$	$\frac{76\,892\,762\,224}{41\,537\,523}$	$\frac{106\,354\,813\,300}{10\,675\,143\,411}$
62	$\frac{1\,976\,840}{961}$	$\frac{12\,800}{246\,977}$	2056	0
63	$\frac{8\,164\,360}{3969}$	$\frac{51\,200}{1\,020\,033}$	$\frac{87\,776\,814\,368}{47\,258\,883}$	$\frac{117\,343\,113\,500}{12\,145\,532\,931}$
64	2057	$\frac{25}{514}$	2056	0
65	$\frac{8\,690\,696}{4225}$	$\frac{2048}{43\,433}$	$\frac{33\,259\,200\,688}{17\,850\,625}$	$\frac{1\,720\,842\,156}{183\,504\,425}$
66	$\frac{2\,240\,008}{1089}$	$\frac{12\,800}{279\,873}$	2056	0
67	$\frac{9\,233\,480}{4489}$	$\frac{51\,200}{1\,153\,673}$	$\frac{112\,969\,031\,104}{60\,453\,363}$	$\frac{141\,538\,540\,300}{15\,536\,514\,291}$
68	$\frac{594\,440}{289}$	$\frac{3200}{74\,273}$	2056	0
69	$\frac{9\,792\,712}{4761}$	$\frac{51\,200}{1\,223\,577}$	$\frac{127\,427\,375\,792}{68\,001\,363}$	$\frac{154\,792\,831\,700}{17\,476\,350\,291}$
70	$\frac{2\,519\,624}{1225}$	$\frac{512}{12\,593}$	2056	0
71	$\frac{10\,368\,392}{5041}$	$\frac{51\,200}{1\,295\,537}$	$\frac{47\,743\,759\,648}{25\,411\,681}$	$\frac{56\,283\,206\,100}{6\,530\,802\,017}$
72	$\frac{166\,600}{81}$	$\frac{800}{20\,817}$	2056	0
73	$\frac{10\,960\,520}{5329}$	$\frac{51\,200}{1\,369\,553}$	$\frac{160\,461\,751\,888}{85\,194\,723}$	$\frac{183\,732\,482\,500}{21\,895\,043\,811}$
74	$\frac{2\,815\,688}{1369}$	$\frac{12\,800}{351\,833}$	2056	0
75	$\frac{11\,569\,096}{5625}$	$\frac{2048}{57\,825}$	$\frac{179\,202\,174\,464}{94\,921\,875}$	$\frac{7\,978\,600\,268}{975\,796\,875}$
76	$\frac{742\,472}{361}$	$\frac{3200}{92\,777}$	2056	0
77	$\frac{12\,194\,120}{5929}$	$\frac{51\,200}{1\,523\,753}$	$\frac{66\,512\,765\,008}{35\,153\,041}$	$\frac{72\,023\,591\,100}{9\,034\,331\,537}$
78	$\frac{3\,128\,200}{1521}$	$\frac{12\,800}{390\,897}$	2056	0
79	$\frac{12\,835\,592}{6241}$	$\frac{51\,200}{1\,603\,937}$	$\frac{221\,558\,230\,432}{116\,850\,243}$	$\frac{233\,573\,364\,700}{30\,030\,512\,451}$

80	$\frac{51\,416}{25}$	$\frac{8}{257}$	2056	0
81	$\frac{13\,493\,512}{6561}$	$\frac{51\,200}{1\,686\,177}$	$\frac{245\,352\,466\,064}{129\,140\,163}$	$\frac{251\,996\,363\,300}{33\,189\,021\,891}$
82	$\frac{3\,457\,160}{1681}$	$\frac{12\,800}{432\,017}$	2056	0
83	$\frac{14\,167\,880}{6889}$	$\frac{51\,200}{1\,770\,473}$	$\frac{90\,337\,951\,936}{47\,458\,321}$	$\frac{90\,454\,450\,500}{12\,196\,788\,497}$
84	$\frac{906\,952}{441}$	$\frac{3200}{113\,337}$	2056	0
85	$\frac{14\,858\,696}{7225}$	$\frac{2048}{74\,273}$	$\frac{298\,637\,622\,064}{156\,601\,875}$	$\frac{11\,667\,916\,468}{1\,609\,867\,275}$
86	$\frac{3\,802\,568}{1849}$	$\frac{12\,800}{475\,193}$	2056	0
87	$\frac{15\,565\,960}{7569}$	$\frac{51\,200}{1\,945\,233}$	$\frac{328\,321\,355\,744}{171\,869\,283}$	$\frac{313\,023\,626\,300}{44\,170\,405\,731}$
88	$\frac{248\,840}{121}$	$\frac{800}{31\,097}$	2056	0
89	$\frac{16\,289\,672}{7921}$	$\frac{51\,200}{2\,035\,697}$	$\frac{120\,055\,005\,424}{62\,742\,241}$	$\frac{111\,788\,025\,900}{16\,124\,755\,937}$
90	$\frac{4\,164\,424}{2025}$	$\frac{512}{20\,817}$	2056	0
91	$\frac{17\,029\,832}{8281}$	$\frac{51\,200}{2\,128\,217}$	$\frac{394\,270\,931\,584}{205\,724\,883}$	$\frac{358\,742\,848\,300}{52\,871\,294\,931}$
92	$\frac{1\,087\,880}{529}$	$\frac{3200}{135\,953}$	2056	0
93	$\frac{17\,786\,440}{8649}$	$\frac{51\,200}{2\,222\,793}$	$\frac{430\,743\,798\,128}{224\,415\,603}$	$\frac{383\,183\,520\,500}{57\,674\,809\,971}$
94	$\frac{4\,542\,728}{2209}$	$\frac{12\,800}{567\,713}$	2056	0
95	$\frac{18\,559\,496}{9025}$	$\frac{2048}{92\,777}$	$\frac{156\,563\,560\,288}{81\,450\,625}$	$\frac{5\,449\,462\,356}{837\,312\,425}$
96	$\frac{18\,508}{9}$	$\frac{50}{2313}$	2056	0
97	$\frac{19\,349\,000}{9409}$	$\frac{51\,200}{2\,418\,113}$	$\frac{511\,221\,013\,264}{265\,587\,843}$	$\frac{435\,344\,899\,300}{68\,256\,075\,651}$
98	$\frac{4\,937\,480}{2401}$	$\frac{12\,800}{617\,057}$	2056	0
99	$\frac{20\,154\,952}{9801}$	$\frac{51\,200}{2\,518\,857}$	$\frac{555\,446\,597\,312}{288\,178\,803}$	$\frac{463\,112\,770\,700}{74\,061\,952\,371}$
100	$\frac{1\,285\,256}{625}$	$\frac{128}{6425}$	2056	0

Out[93]=