$$\int_0^2 x^2 dx$$

Write approximations to the integral for n subdivisions using left sums, right sums, midpoint sums and trapezoidal sums.

$$\int_{-3}^{-1}\left(xe^{x^2}\right)dx$$

Arrange in order, smallest to largest

L20,T20,M20,R20

$$\int_2^6 \left(\ln\left(x\right)\right) dx$$

Find L_{16} and M_{16} Estimate the error.
Are the approximations too big or too small?
How many terms are necessary for each to get the answer to within 0.0005?

$$\int_1^3 \left(\frac{1}{x}\right) dx$$

Write the summation to approximate this integral using left sums, right sums, trapezoids and midpoints. In each case use 400 subintervals and estimate your error.

$$\int_{-2}^{2} \left(e^{x^2} \right) dx$$

Write the summation to approximate this integral using left sums, right sums, trapezoids and midpoints. In each case use 400 subintervals and estimate your error.

$$\frac{dy}{dx} = x - y$$

Determine y using Euler's method and 5 increments of 0.1 starting from $(1,0)$. Repeat the process starting from . $(2,0)$ Show steps

$$\frac{dy}{dx} = x + y$$

Determine y using Euler's method and 5 increments of 0.1 starting from $(1,0)$. Repeat the process starting from . $(2,2)$ Show steps

$$\frac{dy}{dx} = x^2 + y^2$$

Estimate a solution to this differential equation using Euler's method and four steps, starting at (0,0) and ending at x=4.

Then do it using 8 steps

Approximate $\int_1^9 \left(\frac{100}{(x+1)^2} \right) dx$

using Simpson's rule and 32 subintervals. Estimate your error.

Find the area of the region between these two curves

$$y = 12 - x^2$$

$$y = 2x^2$$

Find the area of the region between these two curves

$$y = 2x^2 - 10$$

$$y = x$$