

Quiz #4

Show your work. Closed Notes. You have 25 minutes.

1. (6 total points) For this problem, round your answers to 4 decimal places.

(a) (4 points) Use Simpson's rule and $n = 4$ to estimate $\int_0^2 e^{-x^2} dx$.

(b) (2 points) The actual value of the integral (rounded to 4 decimal places) is 0.8821. What is the error in your approximation above?

(Continued on back)

2. (4 points) Set up an integral to give the length of the arc given by the function

$$y = x^3 - 6x^2 + 8x$$

from $(0, 0)$ to $(5, 15)$. DO NOT SOLVE.

3. (5 points) The following improper integral converges. Determine its value.

$$\int_1^{\infty} e^{1-x} dx.$$