

MATH 122: QUIZ 5 RIEMANN SUMS

Sols

Name: _____

1. (8 points) Approximate the area under the following curve over the interval $[-5, 3]$ using 4 **right** endpoint rectangles.

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

$$n = 4, \quad \Delta x = \frac{b-a}{n} = \frac{3 - (-5)}{4} = \frac{8}{4} = 2$$

$$-5, \boxed{-3, -1, 1, 3}$$

$$f(-3) = \frac{(-3)^2}{2} - 3 + 2 = \frac{7}{2}$$

$$f(-1) = \frac{(-1)^2}{2} - 1 + 2 = \frac{3}{2}$$

$$f(1) = \frac{1^2}{2} + 1 + 2 = \frac{7}{2}$$

$$f(3) = \frac{3^2}{2} + 3 + 2 = \frac{19}{2}$$

$$2 \left(\frac{7}{2} + \frac{3}{2} + \frac{7}{2} + \frac{9}{2} \right)$$

$$= 26$$

2. (2 points) If you could meet anyone, dead or alive, who would it be and why?

Sophie Germain (1776 - 1831)

During her lifetime, she was not allowed to enroll in University or make a career out of mathematics. She continued to study independently and corresponded with another famous mathematician, Carl Gauss, under the pseudonym M. LeBlanc. Despite many obstacles, she made lasting contributions to the field of number theory.