

Quiz

Intermediate Calculus & Analytic Geometry (MATH 242 A) Date: September 3, 2013

Name:

1.(3 pt) The area A of the region S that lies under the graph of the continuous function is the limit of the sum of the areas of approximating rectangles.

$$A = \lim_{n \rightarrow \infty} R_n = \lim_{n \rightarrow \infty} [f(x_1)\Delta x + f(x_2)\Delta x + \dots + f(x_n)\Delta x]$$

Use this definition to find an expression for the area under the graph of f as a limit. Do not evaluate the limit.

$$f(x) = \sqrt{x}, 1 \leq x \leq 12$$

$$A = \lim_{n \rightarrow \infty} \sum_{i=1}^n \underline{\hspace{2cm}}$$

2. (a)(3 pt) Estimate the area under the graph of

$f(x) = 8 + 2x^2$ from $x = -1$ to $x = 2$ using three rectangles and right endpoints.

$$R_3 =$$

(b)(2 pt) Then improve your estimate by using six rectangles.

$$R_6 =$$

3. (2 pt) Write the sum using sigma notation.

$$4 + 5 + 6 + 7 + \dots + 110 = \sum$$