MATH-165
Calculus I

Quiz #10

Name: _____

In the space provided, please write your solution to the following exercises. Show all of your work and not just the final conclusion. Remember to use good notation. The majority of the credit you receive will be based on the completeness and the clarity of your responses.

1. Using the function $f(x) = 2x + 1$ on the interval $[2, 5]$, complete the following parts.

(3 points) (a) Approximate the area under the curve $y = f(x)$ on $[2, 5]$ using R_3.

(4 points) (b) Show that a formula for R_N of the equation is $24 + \dfrac{9}{N}$.

Recall:

$$R_N = \Delta x \sum_{j=1}^{N} f(a + j\Delta x), \qquad \sum_{j=1}^{N} j = \frac{N^2}{2} + \frac{N}{2}$$

Part c is on page 2

(3 points) (c) Compute the area under the graph as a limit.