Name :

Student ID : **Department :**

Math 101, Calculus 1, Section 3
Quiz 4

1. a. Draw the line $y = 2t + 1$ and find the area under this line, above the *t-axis*, and between the vertical lines $t = 1$ and $t = 3$.

b. Let $A(x)$ be the area of the region that lies under the line $y = 2t+1$ between $t = n$ and $t = x$. Here $n > 0$ is a constant and $n < x$. Sketch this region and find an expression for $A(x)$.

c. Differentiate the area function $A(x)$. What do you notice ?

[**Exercise 1, on page 328 of your textbook**]

Please present the solution using mathematical terminology in a clear and understandable manner. (Grading 10 points.)