**Math 162**
**Quiz 4**

20 points possible

**1.** (8 pts.) Consider the following graph.

Complete the following statements about the SLOPE of the graph shown above.

(a) At point A, the SLOPE of the above graph is positive/negative/zero (circle one).

(b) Between A and B, the SLOPE of the above graph is positive/negative/zero (circle one).

(c) At point B, the SLOPE of the above graph is positive/negative/zero (circle one).

(d) Between B and C, the SLOPE of the above graph is positive/negative/zero (circle one).

(e) At point C, the SLOPE of the above graph is positive/negative/zero (circle one).

(f) Between C and D, the SLOPE of the above graph is positive/negative/zero (circle one).

(g) At point D, the SLOPE of the above graph is positive/negative/zero (circle one).

(h) Between D and E, the SLOPE of the above graph is positive/negative/zero (circle one).

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**2.** (12 pts.) Use the four-step method to show that the derivative of $y = 3x^2 - 8x$ is $\dfrac{dy}{dx} = 6x - 8$.

(Step 1) Write down $f(x)$.

(Step 2) Find and simplify $f(x + h)$.

(Step 3) Find and simplify $\dfrac{f(x + h) - f(x)}{h}$.

(Step 4) Find the limiting value $\lim\limits_{h \to 0} \dfrac{f(x + h) - f(x)}{h}$ as $h$ approaches 0.