MTH 162
Quiz 8
Spring 2011

Show all work in a neat and organized fashion. Clearly indicate your answers.
10 points possible.

$y - y_1 = m(x - x_1)$

$f(x) = ax^2 + bx + c \Longrightarrow f'(x) = 2ax + b$

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1. (3 pts.) Suppose total cost in dollars from the production of x printers is given by

$$C(x) = 0.0001x^3 + 0.005x^2 + 28x + 3000.$$

Find the average rate of change of total cost when production changes from 150 to 400 printers.

2. (4 pts.) Find the derivative of the given function. Then write the equation for the tangent line to the curve $y = f(x)$ at the given point P. (For the tangent line, put your answer in the form $y = mx + b$.)

$$f(x) = 5 - 6x^2 + 10x; \qquad P(3, -19)$$

3. (3 pts.) Refer to the graph of $y = f(x)$ on the attached page. For each of these, find the value or state that it does not exist.

(a) $\lim_{x \to 1^-} f(x)$

(b) $\lim_{x \to 1^+} f(x)$

(c) $\lim_{x \to 1} f(x)$