Professor Katiraie MA181 Fall 2006 Quiz Three

Name_____

Evaluate the limit.

1) $\lim_{t\to 4} \frac{t^2 - 7t + 12}{t - 4}$ 1) _____

2) $\lim_{t\to 4} \frac{2 - \sqrt{t}}{4 - t}$ 2) _____

Evaluate $\lim_{h\to 0} \frac{f(a+h) - f(a)}{h}$ **for the given "a" and function f(x)**

3) $f(x) = \frac{x}{5} + 10$ for $a = 7$ 3) _____

4) $f(x) = 2\sqrt{x} + 3$ for $a = 9$ 4) _____

Solve the problem.

5) Find equation of the tangent line to the curve $f(x) = \sqrt{x}$ at the point $x = 4$. 5) _____

6) Assume that a watermelon dropped from a tall building falls $y = 16t^2$ ft in t sec. 6) _____

a) Find the watermelon's average speed during the first 4 sec of fall

b) Using the definition of derivative find the speed of the watermelon at the instant $t = 4$ sec.

Find the limit, if it exists.

7) $\lim_{x \to \infty} \frac{4x^3 - 5x^2 + 3x}{5 + 2x - x^3}$ 7) _____