

Names: _____

Activity #3: Differentiation I

Calculus I

1. Compute the following derivative.

$$\frac{d}{dx} (5x^2 + 8x + 8)$$

2. Compute the derivative of the following function of t .

$$f(t) = \frac{9}{t^2} + \frac{5}{t} + 8t^4.$$

3. Let $f(x) = x + \frac{10}{x}$.

- (a) Compute the derivative of f .
- (b) Find an equation for the line tangent to f at the point $(5, 7)$.

4. Compute the derivative of the following function.

$$f(x) = \frac{x^2 + 6x + 4}{3x - 6}$$

5. Find the values of x at which the line tangent to

$$f(x) = x^3 + 17x^2 + 63x + 74$$

is horizontal.