

Math 105 A/B  
Quiz 3  
S. Balcomb  
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1. Let  $f$  be a function defined near and at  $x=a$ . Define the derivative of  $f$  at  $x=a$ .

$$f'(a) =$$

2. Using the **definition of the derivative**, find  $f'(x)$  if  $f(x) = x^2$ .

3. Using the formulas we developed in class, find the derivative for each of the following functions.

a)  $f(x) = 2x^3 + 5x$

b)  $g(x) = 6x^{-2}$

c)  $h(x) = \sqrt{x}$

d)  $f(x) = \frac{1}{x^3}$

4. Find an equation of the line tangent to the curve  $y = x^2 - 4$  at  $x = 3$ .