

Math 190 – Spring 2017

Assignment G3

First submission: Today in class

Final submission: Thursday, Jan 26

Names: \_\_\_\_\_

\_\_\_\_\_

For each problem below,

- a. Graph the given function.
- b. Draw the secant line connecting the given point with a second arbitrary point.
- c. Draw the tangent line.
- d. Use the definition of the derivative to compute these derivative.
- e. Find the equation of the line tangent to the graph at the given point.

(1)  $f(x) = 3x^2 - 1$ . Find  $f'(2)$ .

(2)  $h(x) = \frac{2}{x}$ . Find  $h'(-2)$ .

(3)  $j(x) = \sqrt{x+4}$ . Find  $j'(-3)$ .

(4)  $b(x) = \frac{3}{\sqrt{x}}$ . Find  $b'(9)$ .

(5)  $b(x) = \frac{x+2}{x+1}$ . Find  $b'(0)$ .

(6)  $r(x) = \frac{\sqrt{x}+1}{\sqrt{x}-1}$ . Find  $r'(2)$ .