

**MATH 232 - Calculus for Business**  
**Homework #2**

1) If the profit for a car company (in thousands of dollars) is given by the equation  $400 - 6x^2$ , find the slope of the tangent to this curve at (1, 394). 1) \_\_\_\_\_

2) Find the instantaneous rate of change of  $f(x) = 400 - 6x^2$  at  $x=1$ . 2) \_\_\_\_\_

3) If the profit for a stereo company (in thousands of dollars) is given by the equation  $P(x) = 25 + 10x - 3x^2$ , find the slope of the tangent to this curve at (2, 33). 3) \_\_\_\_\_

4) Find the instantaneous rate of change of  $f(x) = 25 + 10x - 3x^2$  at  $x=2$ . 4) \_\_\_\_\_

5) Use the definition of derivative to find  $f'(x)$  if  $f(x) = 2x^2 - 3x$ .

6) Use the definition of derivative to find  $f'(x)$  if  $f(x) = x^2 + 4$ .

7) Find  $y'$  if  $y = 4x^3 - 6x^2 + 7x - 8$ .

7) \_\_\_\_\_

8) Find  $y'$  if  $y = 7x^4 - 5x^3 + 4x - 6$ .

8) \_\_\_\_\_

9) Find  $y'$  if  $y = \frac{1}{4} - \frac{x}{2}$ .

9) \_\_\_\_\_

10) Find  $y'$  if  $y = \frac{7}{3}(9x + 3)$ .

10) \_\_\_\_\_