

**MATH 232 - Calculus for Business  
Homework #3**

1) Find  $y'$  if  $y = (x^3 - 10x + 2)(x^2 + 7x + 1)$ . 1) \_\_\_\_\_

2) Find  $f'(x)$  if  $f(x) = (5x^2 - 7x + 3)(7x^2 - 4x + 1)$  2) \_\_\_\_\_

3) Find  $y'$  if  $y = \frac{2x + 3}{7 - 5x}$ . 3) \_\_\_\_\_

4) Find the slope of the curve  $y = \frac{4x}{x + 2}$  at the point where  $x = 3$ . 4) \_\_\_\_\_

5) If  $f(x) = \frac{x^2 - 5x + 2}{3x + 2}$ , then  $f'(x) =$  5) \_\_\_\_\_

6) Suppose that the equation  $r = 430q - 2q^2$  gives the total revenue  $r$  (in dollars) that a manufacturer receives when  $q$  units of a product are sold. Determine the marginal revenue when  $q = 100$ . 6) \_\_\_\_\_

7) Find  $y'$  if  $y = \frac{5(4x - 1)^2}{2}$ .

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

8) Find  $y'$  if  $y = \frac{1}{(2 - 3x)^4}$ .

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

9) Find  $y'$  if  $y = (x^2)(2x - 5)^5$ .

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

10) Find the slope of the tangent to the curve  $y = \sqrt{x + 4}$  at the point where  $x = 5$ .

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