

Calculus Worksheet #1 Unit 2 page 1 \_\_\_\_\_

Find the equation of (a) the line that is tangent to and (b) the line that is normal to each of the following functions at the point on the graph with the given x-coordinate. If any line is oblique give its slope-intercept equation. Show your work and your solutions neatly organized.

1.  $f(x) = x^2$  ;  $x = 1$   
(a) \_\_\_\_\_  
(b) \_\_\_\_\_

2.  $f(x) = x^2 + 2x - 1$  ;  $x = -1$   
(a) \_\_\_\_\_  
(b) \_\_\_\_\_

3.  $f(x) = x^3$  ;  $x = -2$   
(a) \_\_\_\_\_  
(b) \_\_\_\_\_

4.  $f(x) = x^2 - 3x + 2$  ;  $x = 3$   
(a) \_\_\_\_\_  
(b) \_\_\_\_\_

## Calculus Worksheet #1 Unit 2 page 2

Find the equation of (a) the line that is tangent to and (b) the line that is normal to each of the following functions at the point on the graph with the given x-coordinate. If any line is oblique give its slope-intercept equation. Show your work and your solutions neatly organized.

5.  $f(x) = x^3 - 3x^2 - 9x - 3$  ;  $x = -2$

(a) \_\_\_\_\_

(b) \_\_\_\_\_

6.  $f(x) = -x^3 + 12x^2 - 45x + 45$  ;  $x = 2$

(a) \_\_\_\_\_

(b) \_\_\_\_\_

7.  $f(x) = \sqrt{x}$  ;  $x = 9$

(a) \_\_\_\_\_

(b) \_\_\_\_\_

8.  $f(x) = \sqrt[3]{x}$  ;  $x = -8$

(a) \_\_\_\_\_

(b) \_\_\_\_\_