

MATH 151  
Mrs. Bonny Tighe

**QUIZ 2A**  
2.5, 2.6, 3.1, 3.2  
25 points

NAME \_\_\_\_\_

SECTION \_\_\_\_\_ Fri 2/17/06

1. Use the **definition** of a derivative to find the slope of the tangent line and use it to find an equation of the tangent line to the curve at the given point.

$$f(x) = x - 3x^2 + 4 \quad \text{at } (1, 2)$$

2. The cost of wheat, in dollars per ton,  $t$  days after the harvest, is given by  $W=p(t)$ . What is the meaning of the derivative  $p'(t)$ ? What are its units?

3. The position function of a particle after time  $t$  seconds is given by  $s(t) = -t^2 - 8t + 10$ .

a) Find the average velocity of the particle from  $t = 0$  to  $t = 1$  seconds.

b) Find the instantaneous velocity of the ball at 1 sec., using the definition of derivative to find the slope.

c) Explain why the answers vary by so much.

4. If the tangent line to  $y = f(x)$  at  $(1,2)$  passes through the point  $(3,-2)$ ,  
find  $f(1) = \underline{\hspace{2cm}}$  and  $f'(1) = \underline{\hspace{2cm}}$

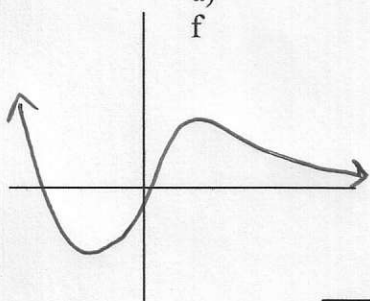
5. Find the derivative of the given functions using the **definition of derivative**. State the domain of the function and the domain of the derivative.

a)  $h(x) = \frac{2}{3-x}$

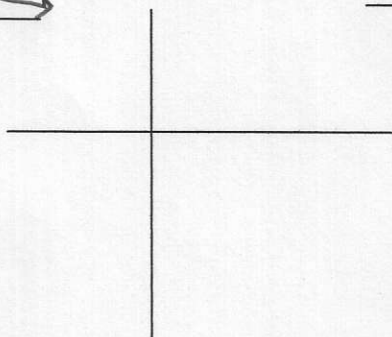
b)  $f(x) = 2\sqrt{x+4}$

6. Sketch  $f'$  beside each function  $f$ .

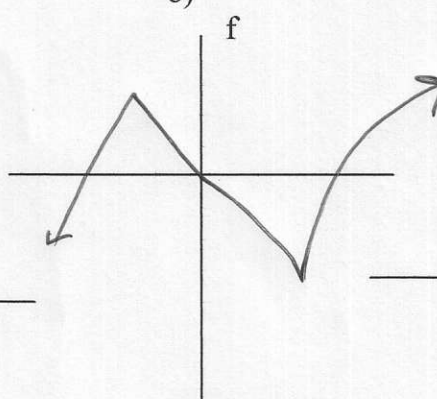
a)



$f'$



b)



$f'$

