

MATH 151
Mrs. Bonny Tighe

QUIZ 2
2.5, 2.6, 3.1, 3.2
25 points

NAME _____

SECTION _____ Fri 2/17/06

1. 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?

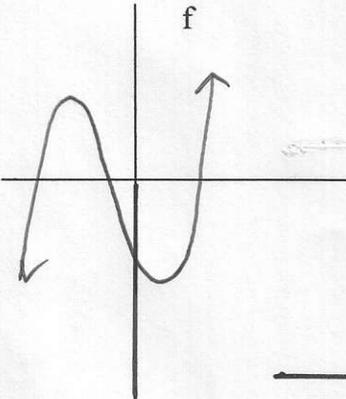
2. Find the derivative of the given functions using the **definition of derivative**. State the domain of the function and the domain of the derivative.

a) $h(x) = \sqrt{x+2}$

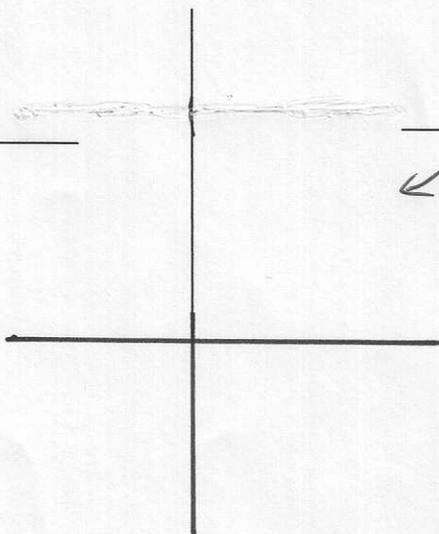
b) $f(x) = \frac{3}{x-2}$

3. Sketch f' beside each function f .

a)
f

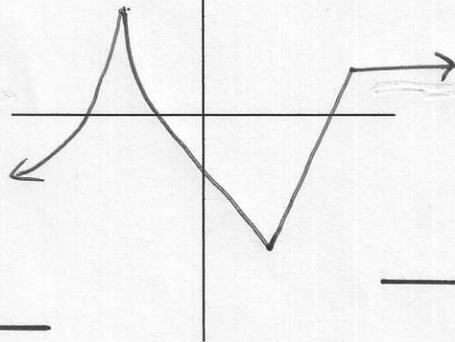


f'

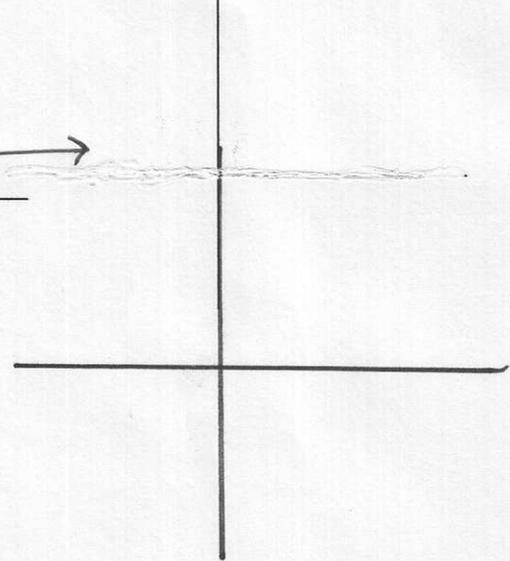


b)

f



f'



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

5. The position function of a particle after time t seconds is given by $s(t) = -t^2 - 4t + 10$.

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.

6. 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.

$$f(x) = 3x - 2x^2 + 4 \quad \text{at } \begin{matrix} (1, 5) \\ (1, 5) \end{matrix}$$