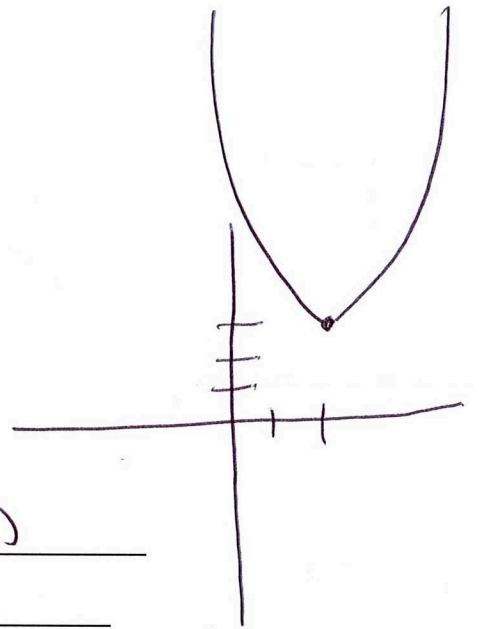


Name _____
Date _____

Advanced Algebra
Unit 2: Families of Functions
Homework #9

1. Given $f(x) = 3x+2$ and $g(x) = (x-1)^2$
- a. $f(g(2))$ $f(1)$ (5)
- b. $f(g(x))$ $3(x-1)^2 + 2$
- c. $g(f(2))$ $g(8)$ (49)
- d. $g(f(x))$ $(3x+2-1)^2$ $(3x+1)^2$



2. What is the domain and range for $y = (x-2)^2 + 3$
- a. Domain All Real #'s
- b. Range $y \geq 3$
- c. Does this have a maxima or a minima? At (2, 3)
3. Given $f(x) = 4x-5$ find $f(5)$ (15)

4. Given a piece of paper that is 20 inches by 50 inches. You will be making a box with an open top. You do this by cutting square corners out of the paper.

- a. What is the equation to represent the volume of this box $V =$

$$V = x(20-2x)(50-2x)$$

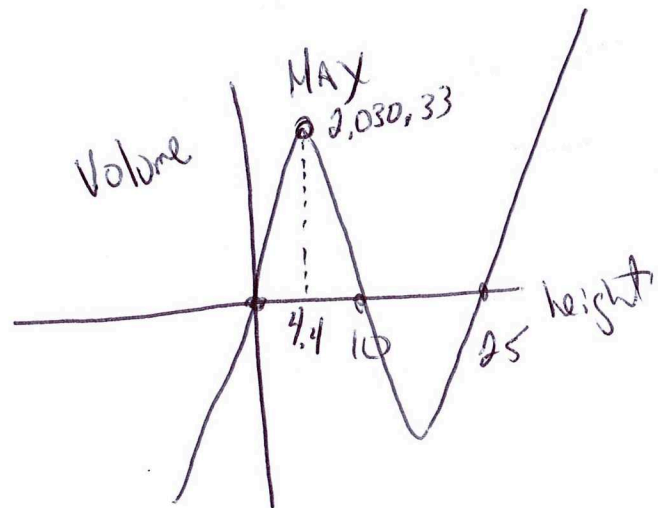
Max occurs at
(4.4, 2030.33)

- b. What are the x intercepts of this equation?

0 10 25

- c. What is the real life domain for this problem?

$$0 < x < 10$$



5. Given $f(x) = 3x-2$ Find x when $f(x) = 28$

$$28 = 3x - 2$$

$$30 = 3x$$

$$x = 10$$