Review Packet

You must show all work!!! (you can attach scratch work if necessary)

Equations

1. $\dfrac{8-6x}{2} = x$

2. $9x - 8 + 4x = 7x + 16$

3. $-2(x + 3) = 4x - 3$

4. $3x - 10 = 2(4x - 5)$

5. $2(x + 4) - 5 = 2x + 3$

6. $-2(x + 2) = -2x + 1$

Solving for a Variable

7. Solve $2x + 3y = 12$ for x

8. Solve $\dfrac{3+w}{z} = x$ for w

Inequalities
Solve and graph the following inequalities:

9. $\dfrac{3}{2}x \leq -\dfrac{1}{2}x + 6$

10. $3 < 2x - 5(x + 3)$

11. Hanna has a savings account with a balance of $210 and deposits $16 per month. Faith has a savings account with a balance of $175 and deposits $20 per month. Write and solve an inequality to determine the number of months Hanna's account balance will be greater than Faith's account balance.

Functions

12. Is it a function? Explain.

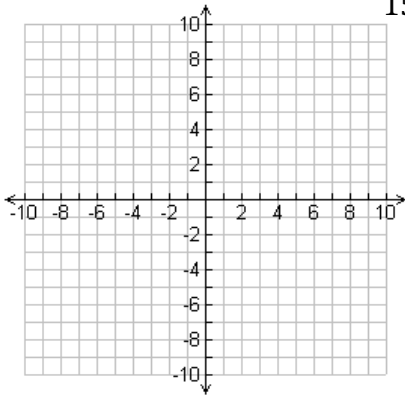| x	y
-1	5
-2	3
6	20
9	18

13. Is it a function? Explain.
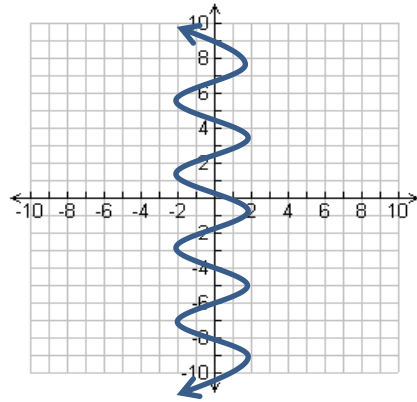
For 14 and 15, make a table of values and use these values to graph the function.

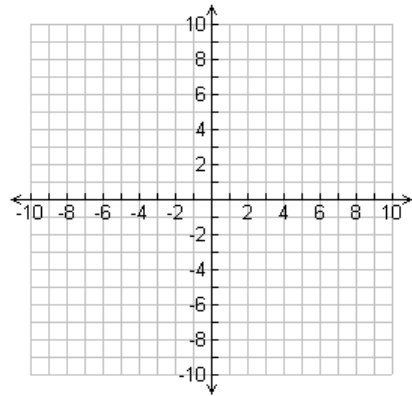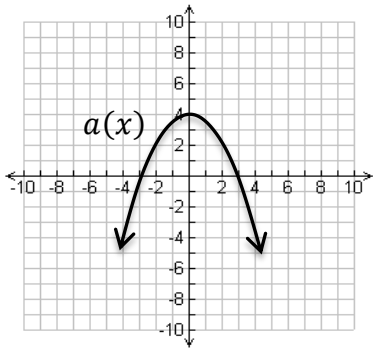14. $b(x) = x^2 - 6$

x	f(x)

15. $f(x) = \sqrt{x + 6} + 3$

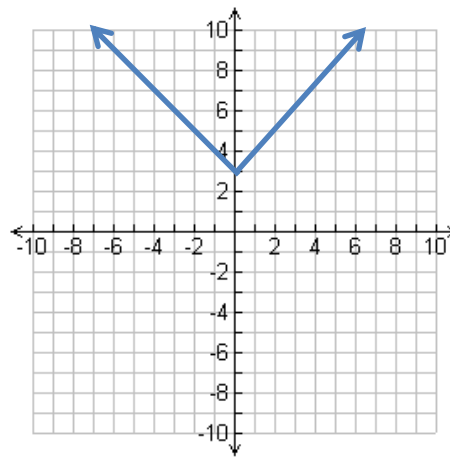| x	f(x)
-6	
-5	
-2	
3	
10	

16. Let $f(t)$ be the number of people, in millions, who own cellphones t years after 1990. Explain what $f(10) = 100.3$ means in terms of the situation.

17. Which is greater, a(-2) or b(-2)?
SHOW ALL WORK!
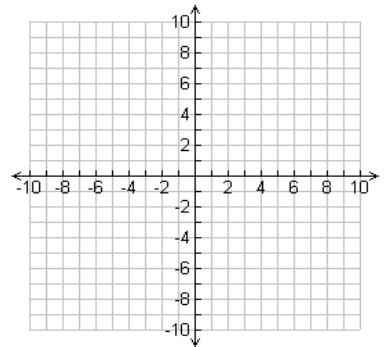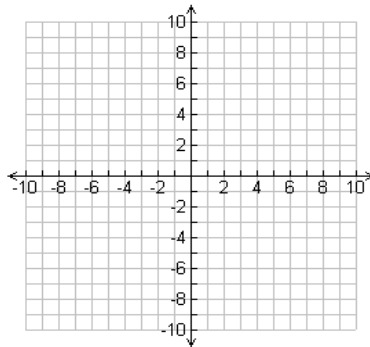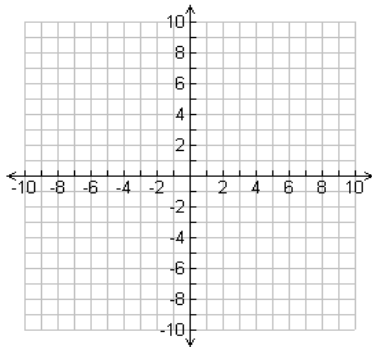
a(x)

$$b(x) = |x - 3| + 2$$

18.

Domain:

Range:

19. Graph: $y = -\frac{4}{5}x + 6$

20. Graph: $2x - 6y = 18$

21. Graph: $x = 5$

21. Find the equation for the line in slope intercept form that passes through the points (7, 17) (3, 5)

22. The temperature at 6:00 AM is 35°F. Each hour, the temperature rises by 4°F.
    a) Write an equation to represent the situation: _____
    b) The inputs (x) represent: _____
    c) The outputs (y) represent: _____
    d) Make a table.

x	y

e) Graph. <u>Make sure you label your axes.</u>
f) Should you connect your points?
Why or why not?

_____
_____
_____
_____

23. A swimming pool is being filled at a constant rate. The depth of the pool is a function of the number of minutes the pool has been filling, as shown in the table.

a. Write an equation in slope intercept form that represents the function.

| Time(min)	Depth(ft)
4	5
8	7
16	11

b. What does the slope represent in terms of the situation?

c. What does the y-intercept represent in terms of the situation?

24. The table shows the balance of a bank account on different days of the month. During which time interval did the balance decrease at the greatest rate?

Day	1	6	16	22	30
Balance($)	550	285	210	210	175

25. The height of a plant, in centimeters, is modeled as a function of time, in days.
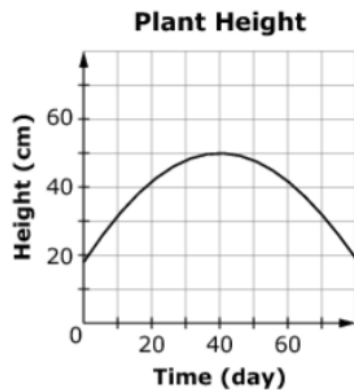
Plant Height

Find the average rate of change for the height of the plant between day 0 and day 20.