Name: _____ Period: _____ Date: _____ Score: _____
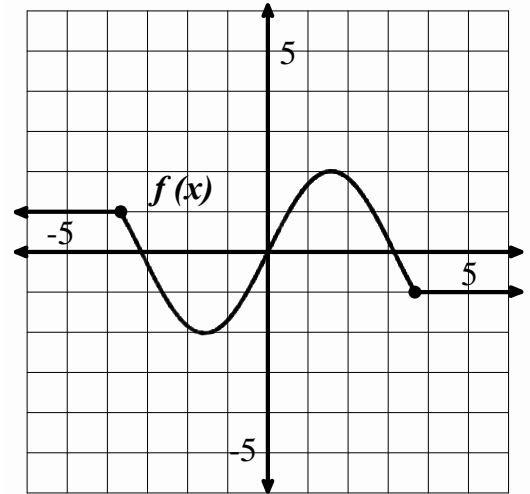
Unit 5 Review - FUNCTIONS

Use the graph at the right to answer questions 1-12. Estimate where needed.

1. List any minimum(s) of the graph: _____.

2. List any maximum(s) of the graph: _____.

3. When is the graph increasing?

   _____.

4. When is the graph decreasing?

   _____.

5. What is the range of the graph? _____.

6. What is the domain? _____.

Give two end behavior statements:

7. _____.

8. _____.

9. List any x-intercepts: _____.

10. $f(5)$ = _____.

11. $f(-.5)$ = _____.

12. $f(x) = 2$, x = _____.

13. $f(x) = 0$, x = _____.

14. If $h(x) = 2x - 4$, and $f(x) = -2x + 5$ and $g(x) = -10$, find the following:

   a. $f(-4)$ =

   b. $h(x) = 0$

   c. $f(x) = -4$
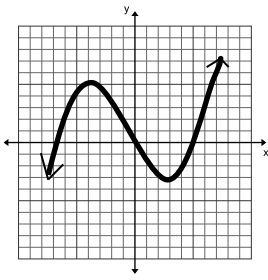
   d. $f(x) + h(x)$

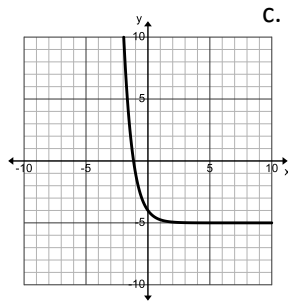   e. $h(x) - g(x)$

   f. $f(w) =$

   g. $h(3m) =$

15. State if the relationship represents a Function (F) or Not a Function (NF)
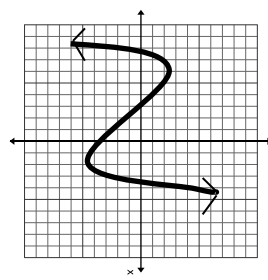
a.

b.

c.

d.
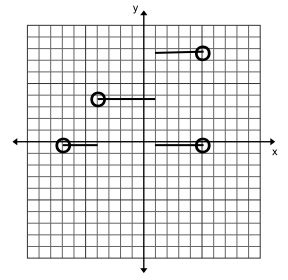
e. {(2, -1), (3, -1), (4, -1), (-2, 1), (-3, 1), (-4, 1)}

f.

x	-2	-1	0	-1
y	4	1	1	1

g.

h.

-2   5
4   6
7   7
10   8
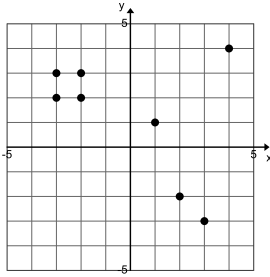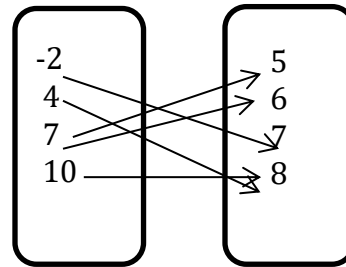
16. Give the domain and range of each relation.

a. {(2, -1), (3, -1), (4, -1), (-2, 1), (-3, 1), (-4, 1)}

b.

x	-2	0	2	3	4	5
y	-2	7	4	-2	4	7

17. Match a story with a graphic representation.

I.   The amount of water in the washing machine when washing a load of laundry. _____

II.   The money earned if each correct answer earns 10 more dollars. _____

III.   The amount of time left in a person's life. _____

IV.   The value of a car over a 15 year period of time. _____

V.   The money earned for each correct answer doubles the previous earnings. _____

VI.   The amount of money a babysitter earns, if her pay increase only when she completes a full hour. _____

A.

B.

C.

D.

E.

F.
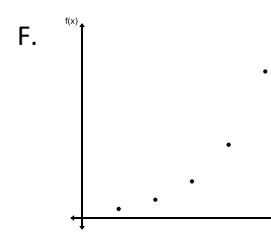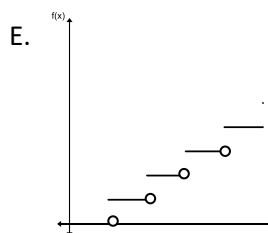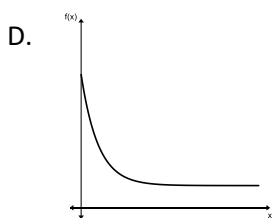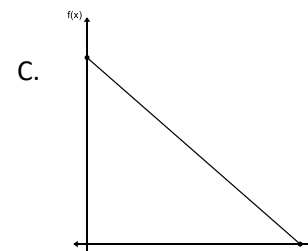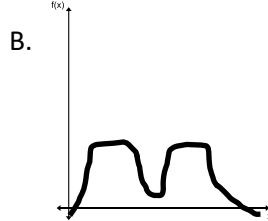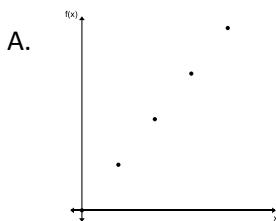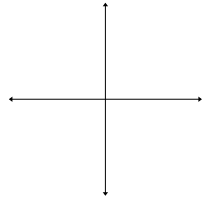
18.   From problem #17, which graphs are continuous, and which are discrete?
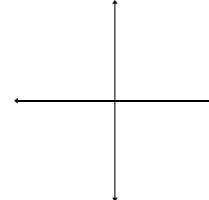
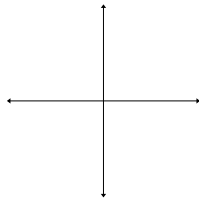   CONTINUOUS: DISCRETE:
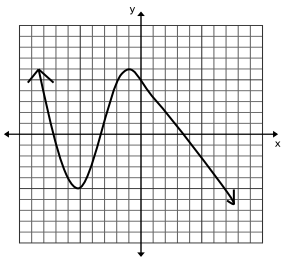
19. Draw a continuous graph that could represent   20. Draw a continuous graph that is NOT a
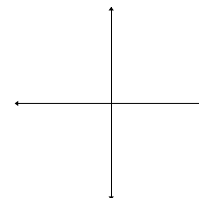a function.   function.
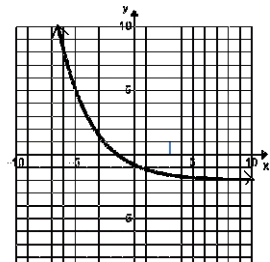
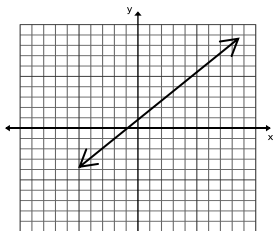21. Draw a discrete graph that could represent a   22. Draw a discrete graph that is NOT a function.
function.

23. a) What are the end behaviors?

     b) When is the graph increasing?
     c) When is the graph decreasing?
     d) List all x-and y-intercepts.

24.   a) What are the end behaviors?

     b) When is the graph increasing?
     c) When is the graph decreasing?
     d) List all x-and y-intercepts.
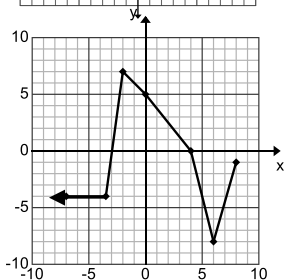
25.   a) What are the end behaviors?

     b) When is the graph increasing?
     c) When is the graph decreasing?
     d) List all x-and y-intercepts.

26. a) What are the end behaviors?

     b) When is the graph increasing?
     c) When is the graph decreasing?
     d) List all x-and y-intercepts.

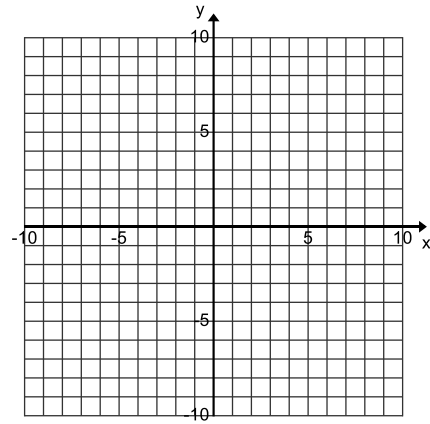27. Draw a graph that meets all the following criteria:
Nonlinear;

Intercepts: (-8,0), (-4,0), (0,0), (4,0), (8,0);

Maximums:(-6,3), (2,3); Minimums:(-2,-3), (6,-3);

End behavior: As x approaches −∞, y approaches −∞.

As x approaches ∞, y = 2.

28. Fill out the table below.

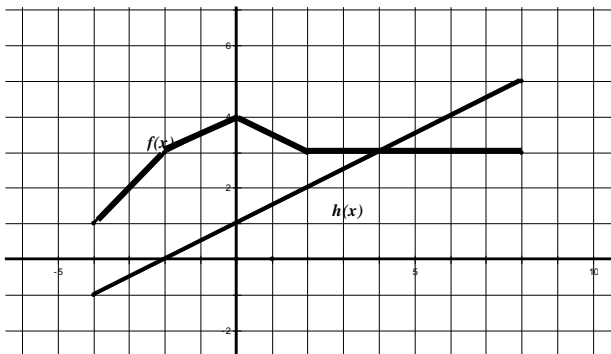| x	a(x)	b(x)	a(x) + b(x)	a(x) - b(x)
-2	-7	-11		
-1	-2	-2		
0	0	1		
1	2	4		
2	4	7		
3	10	10		
4	15	12		

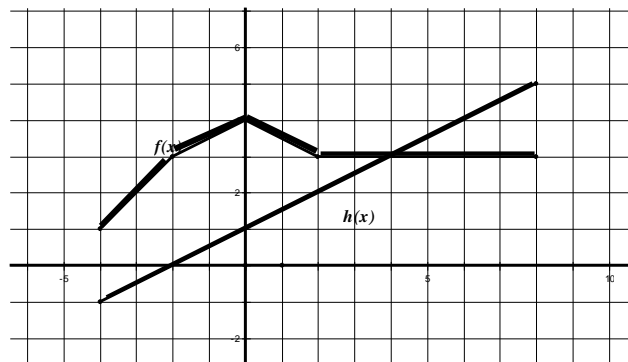29. When is b(x) increasing?   30. When is b(x) > a(x)?   31. What is (a + b)(2)?

32. What is the y-intercept of b(x)?   33. What is the minimum point of a(x)?

34. Find $f(x) + h(x)$ and plot it on the graph below.   35. Find $f(x) − h(x)$ and plot it on the graph below.

36. Write how you would say "23 < x < 28" out loud.