

NAME _____

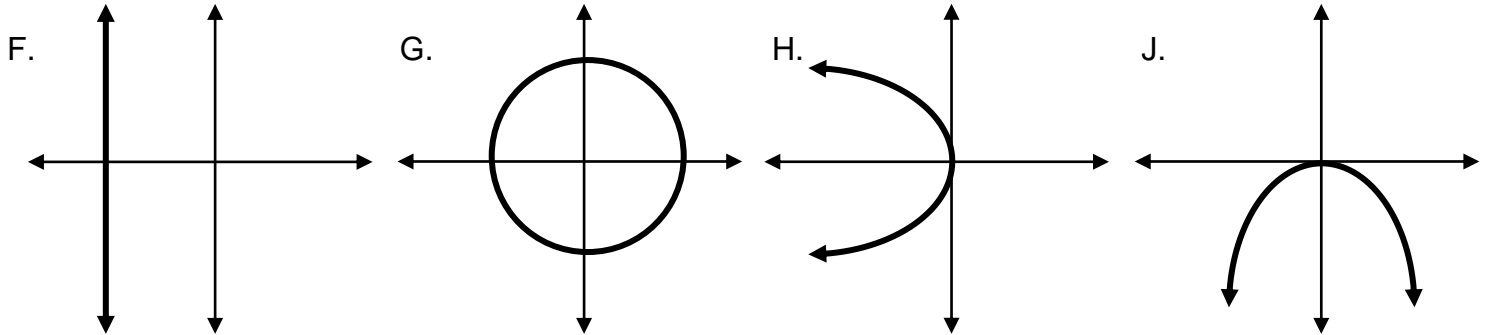
DATE _____

PER. _____

Review: Making Connections

Answer the following. Show all work.

_____ 1. Which of the following is a function?



_____ 2. Which table identifies points on the line defined by the equation $y - 2x = -4$?

A.

x	y
-4	4
-1	-2
3	-10
6	-16

B.

x	y
-2	-8
0	-4
3	2
7	12

C.

x	y
-4	-12
-1	-6
3	2
5	6

D.

x	y
-3	-2
0	4
2	8
5	14

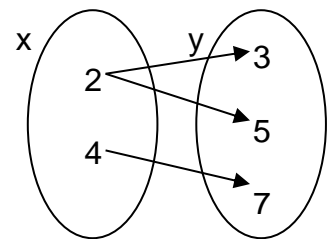
_____ 3. Which relation is represented by the mapping diagram below?

F. $\{(3, 2), (5, 2), (7, 4)\}$

H. $\{(2, 3), (4, 7)\}$

G. $\{(5, 2), (7, 4)\}$

J. $\{(2, 3), (2, 5), (4, 7)\}$



_____ 4. An architect is designing an office building with n floors that will have an FM radio antenna 15.85 m tall on its roof. Each floor of the building will be 3.9 m high. Which function can be used to find the total height of the building in meters, including the FM antenna?

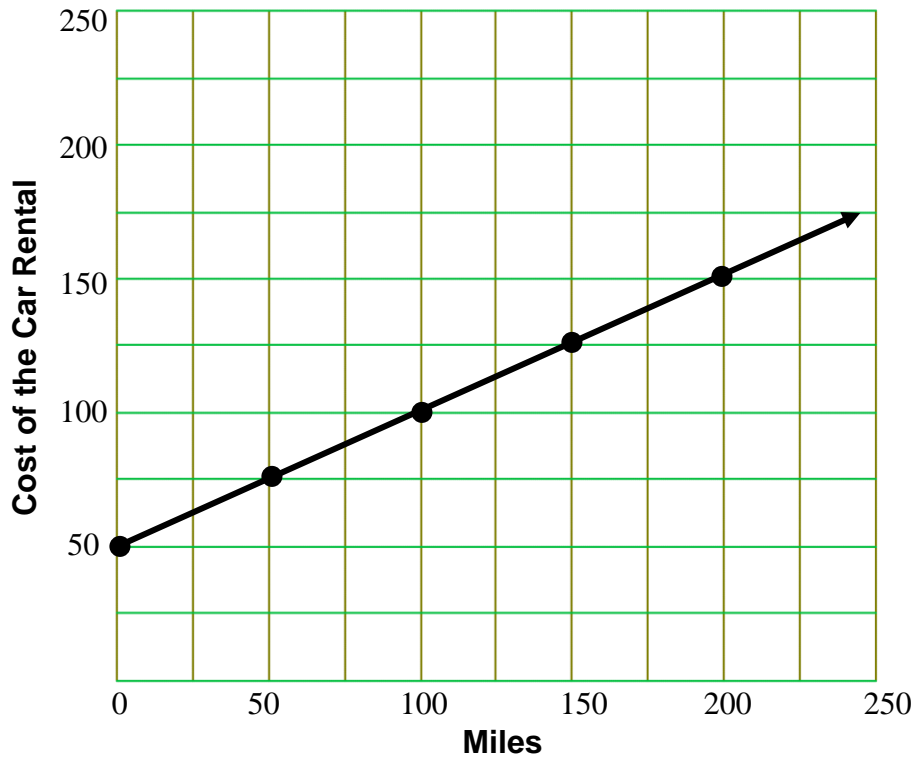
A. $h(n) = 15.85n + 3.9$

C. $h(n) = 3.9n - 15.85$

B. $h(n) = 3.9n + 15.85$

D. $h(n) = 19.75n$

5. Rick rents a car for one day for \$50 plus \$0.50 per mile. The graph below describes the cost of the car rental.



_____ depends on _____

a) What equation could be used to determine the total cost of renting a car, C , for m , miles?

b) What is the cost for driving 50 miles? _____

c) Which of the following about the graph above is false?

- A. The y-intercept represents the cost of renting a car before driving any miles.
- B. The slope represents the cost per mile driven.
- C. The amount of money spent depends on the number of miles driven
- D. The graph represents a direct variation situation.

6. What is the slope and y-intercept for the table shown?

$m =$ _____

$b =$ _____

x	y
2	6
4	12
6	18

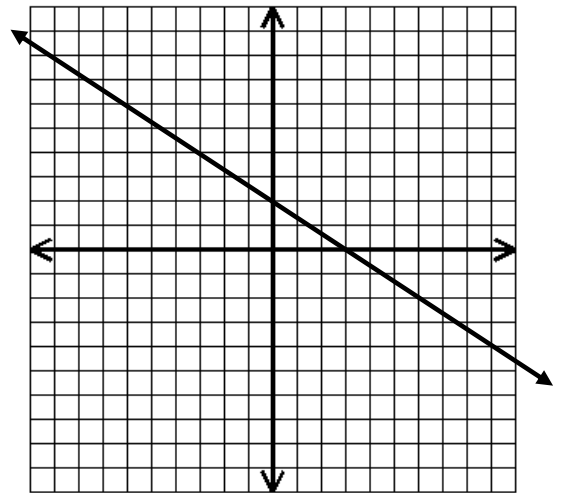
7. To find t , the total cost of an order of DVDs from a certain website, the function $t = 19.99d + 4.99$ can be used, where " d " represents the number of DVDs ordered.

- a) What is the slope? What does it represent?
- b) What is the y-intercept? What might it represent?
- c) What is the cost of ordering 3 DVDs? _____
- d) If " t " is a function of " d ", which of the following is true?
 - A. The value of d is dependent on t .
 - B. The value of t is dependent on d .

8. What are the x- and y-intercepts of the line graphed below?

x-intercept: _____

y-intercept: _____



9. If $(x, -1)$ is a solution to the equation $x - 4y = 12$, what is the value of x ?

10. Which of the following equations represents the linear parent function?

F. $y = -x$

H. $y = x$

G. $y = x^2$

J. $y = -x^2$

11. Write the following equations in slope-intercept form.

a) $-x + 3y = 9$

b) $2x - y = 12$

12. Match each equation below to the form it's in.

_____ $4x + 3y = 16$

A. Slope-intercept form

_____ $y - 5 = 3x - 2$

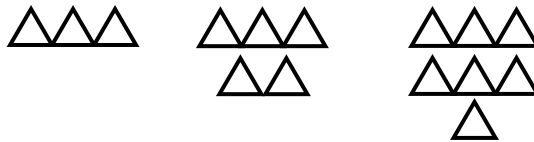
B. Standard form

_____ $y = \frac{1}{2}x - 7$

C. Neither

_____ $2x - y = -14$

13. The figure below shows a pattern. Find the expression that could be used to determine the number of triangles in the n^{th} figure.



14. How many triangles would there be in the 10^{th} figure of the pattern shown above?

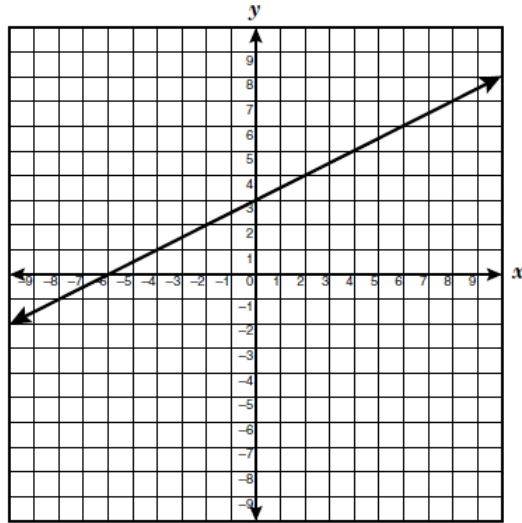
15. Find the algebraic expression that represents the relationship between the terms in the sequence below and its position, n , in the sequence. Find the 15^{th} term in the sequence.

3, 8, 13, 18, ...

Expression: _____

15^{th} Term: _____

_____ 16. Which linear function best describes the graph shown below, if the slope is divided by $\frac{3}{4}$ and the y-intercept remains the same?



A. $y = \frac{-3}{4}x + \frac{1}{2}$

C. $y = -3x - \frac{1}{2}$

B. $y = \frac{2}{3}x + 3$

D. $y = \frac{3}{8}x + 3$

_____ 17. Two functions are given below.

$$f(x) = 2x + 5$$

$$g(x) = 4x + 5$$

How does the graph of f compare with the graph of g ?

F. The graph of $f(x)$ is less steep than the graph of $g(x)$.

G. The graph of $f(x)$ is steeper than the graph of $g(x)$.

H. The graph of $f(x)$ has a greater y-intercept.

J. The graph of $f(x)$ has a smaller y-intercept.

_____ 18. The Junior class is selling \$20 prom tickets. The money raised will be given to the DJ for his services. Which best describes the dependent quantity in this situation?

A. The number of tickets sold is dependent on the amount the DJ will earn.

B. The price of each ticket is dependent on the number of tickets sold.

C. The amount the DJ earns is dependent on the number of tickets sold.

D. The amount the DJ earns is dependent on the price of each ticket.

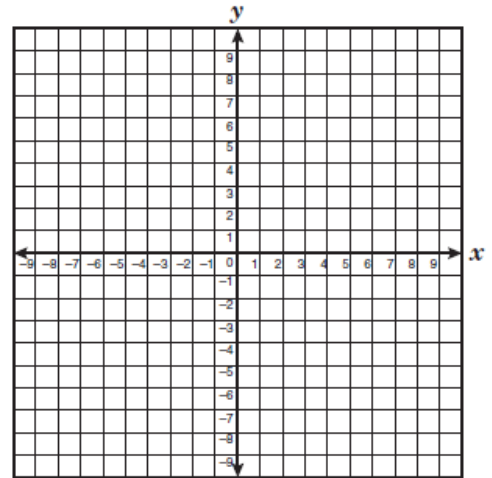
19. Find the x- and y-intercepts of $-4x + 7y = -28$.

F. x-intercept: $(-4, 0)$
y-intercept: $(0, 7)$

G. x-intercept: $(7, 0)$
y-intercept: $(0, -4)$

H. x-intercept: $(0, 7)$
y-intercept: $(-4, 0)$

J. x-intercept: $(0, -4)$
y-intercept: $(7, 0)$



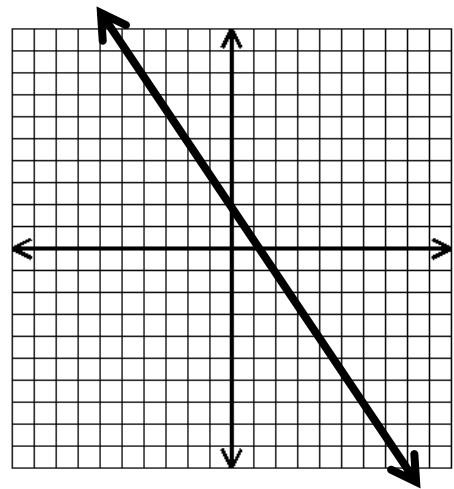
20. Which equation is represented by this graph?

A. $y = -\frac{2}{3}x + 1$

C. $y = -\frac{3}{2}x + 1$

B. $-2x + 3y = 6$

D. $3x + 2y = 4$



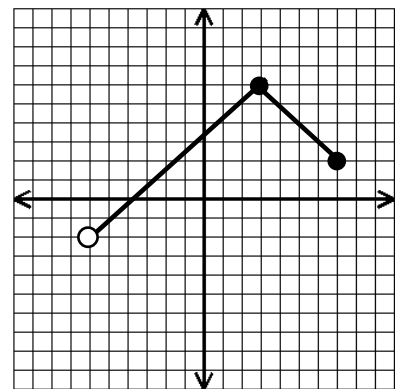
21. What is the domain of the graph shown?

F. $-2 < x \leq 6$

H. $-6 < x \leq 7$

G. $-6 < x < 7$

J. $-6 < x \leq 3$



22. What is the range of the graph shown in #21?

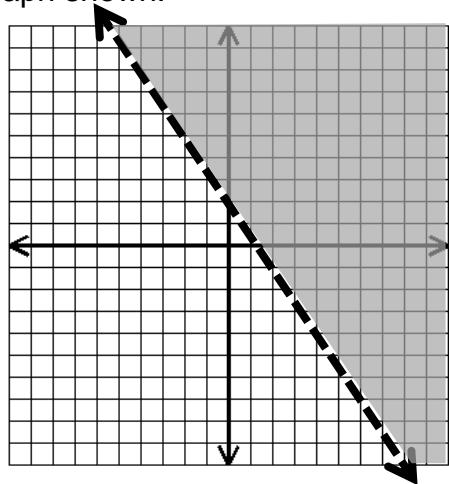
A. $-6 < y < 7$

C. $-6 < y \leq 3$

B. $-2 < y \leq 6$

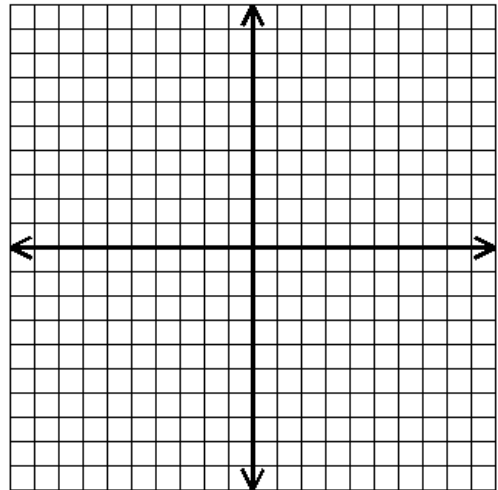
D. $-2 < y < 6$

23. Write the inequality that represents all the solutions of the graph shown.



_____ 24. Use the grid to graph $y > 2x - 5$. Which coordinate point represents a solution of this inequality?

- A. (0, -5)
- B. (7, 2)
- C. (-5, 3)
- D. (2, -8)



25. Katie earns \$8 an hour babysitting for Ms. Knox and \$10 extra if she drives over in her own car without having to be picked up.

a) If Katie's total pay can be represented by the equation $y = 8x + 10$, what does the variable x represent?

b) Ms. Knox decides to change Katie's pay according to the table shown.
How much will Katie get paid if she babysits for 7 hours?

hrs	pay
2	18
4	36
6	54