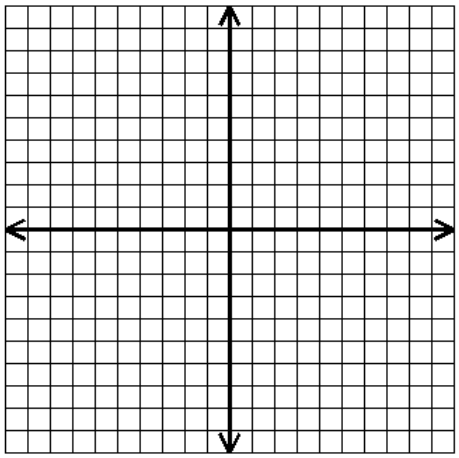
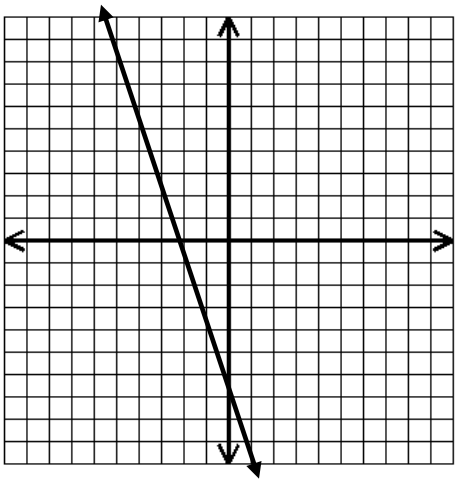
NAME_____DATE_____PER._____

Review – Solving Systems of Equations

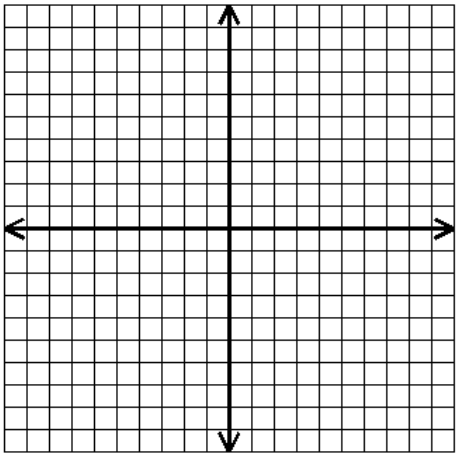
1. Write the linear function that includes the points (4, 9) and (-2, -6).



2. The graph of a line that contains the points (-3, 2) and (-1, -4) is shown below.



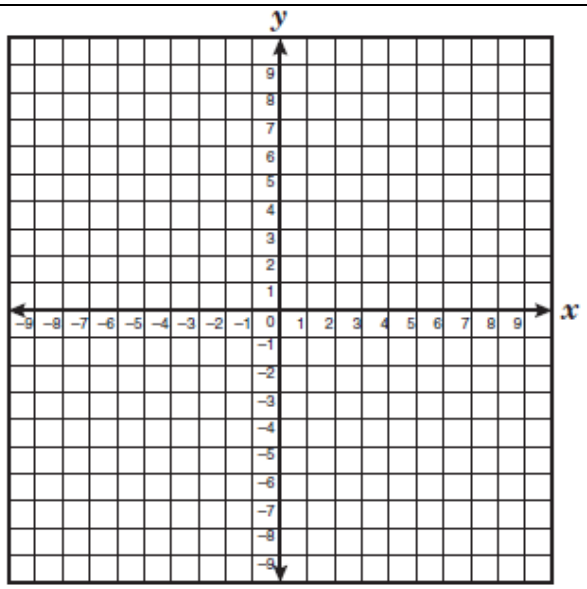
Graph the line where the slope is doubled and the y-intercept remains constant.



3. Solve the system by graphing.

$3x - y = -4$

$y = 3x + 4$



Solution:_____

4. Elizabeth met 24 of her cousins at a family reunion. The number of male cousins was 6 less than twice the number of female cousins. If *M* represented the number of male cousins and *F* the number of female cousins, which system of equations could be used to find how many male cousins Elizabeth met?

A. $M = 2F + 6$
$M - F = 24$

B. $M = 2F - 6$
$M + F = 24$

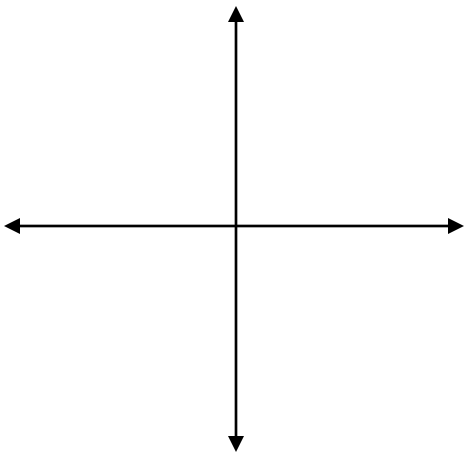
C. $F = 2M + 6$
$M - F = 24$

D. $F = 2M - 6$
$M + F = 24$

5. Solve the following system by graphing on the calculator. Sketch the graph.

x	y
-3	10
-2	8
4	-4
6	-8

Equation (from table):_____



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

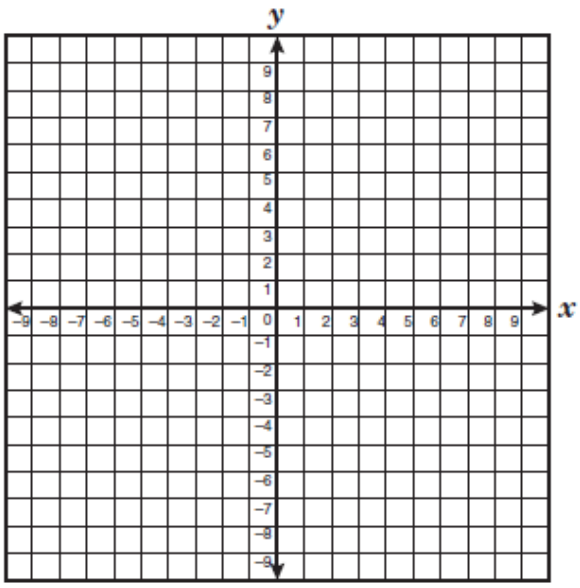
Equation (from table):_____

Solution:_____

6. Solve the system by graphing.

$x + 2y = 10$

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



Solution:_____

7. What is the rate of change of the function x = 5?

8. What is the rate of change of the function y = -2?

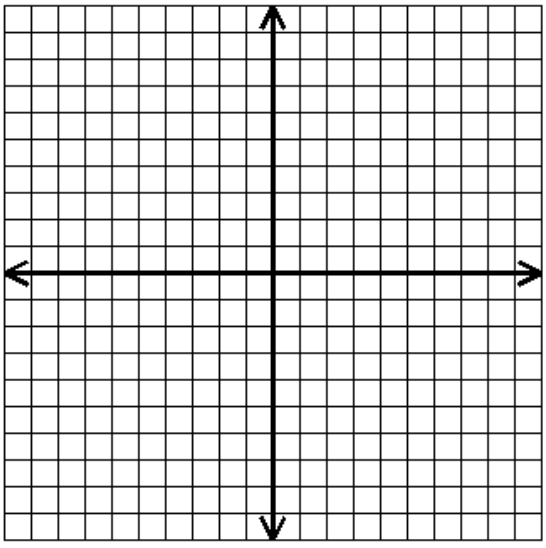
9. Two lines have the given equations. At what point do they intersect?

$2x - y = 1$

$3x - y = -6$

Solution:_____

10. Graph the line that has a slope of $-\frac{4}{3}$ and contains the point (-6, 2).



11. Some values for two linear equations are shown in the tables below.

Equation 1

x	y
-2	-4
2	-2
6	0
8	1

Equation 2

x	y
-5	5
-4	2
-2	-4
1	-13

What is the solution to the system of equations represented by these tables?

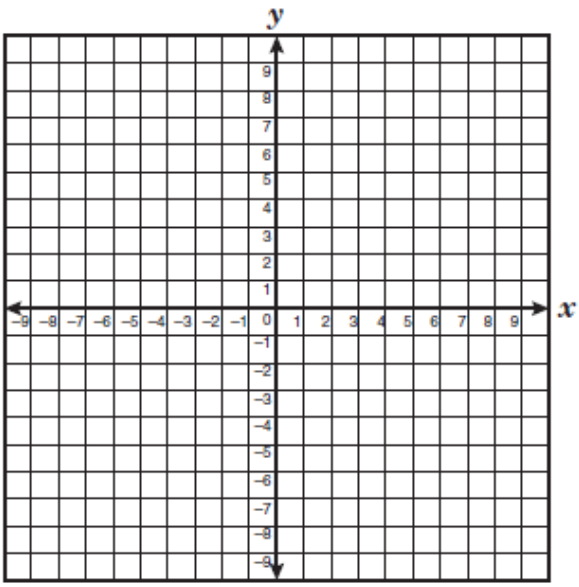
A. (2, -2)

C. (-5, 5)

B. (-2, -4)

D. (-4, 2)

12. If the slope of the equation $y = -\frac{2}{3}x - 6$ is changed to $\frac{3}{2}$ and the y-intercept is changed to (0, 2), which statement best describes this situation?



A. The new line is perpendicular to the original line.

B. The new line is parallel to the original line.

C. The new line and the original line have the same y-intercept.

D. The new line and the original line have the same x-intercept.

13. Write the equation of the line that contains the point (-1, -9) and has a slope of 4.

14. Set up a system of equations, then solve using matrices.

At a pet store the total cost of 8 pounds of Brand X dog food and 1 pound of Brand Y dog food is $8.40, including tax. The total cost of 16 pounds of Brand X dog food and 8 pounds of Brand Y dog food is $24.00, including tax. What is the price per pound of Brand Y dog food?

Equations:_____

_____

Solution:_____

15. Set up a system of equations, then solve using matrices.

A rectangle has a perimeter of 18 cm. Its length is 5 cm more than its width. Find the dimensions.

Equations:_____

_____

Solution:_____

16. Set up a system of equations, then solve using matrices.

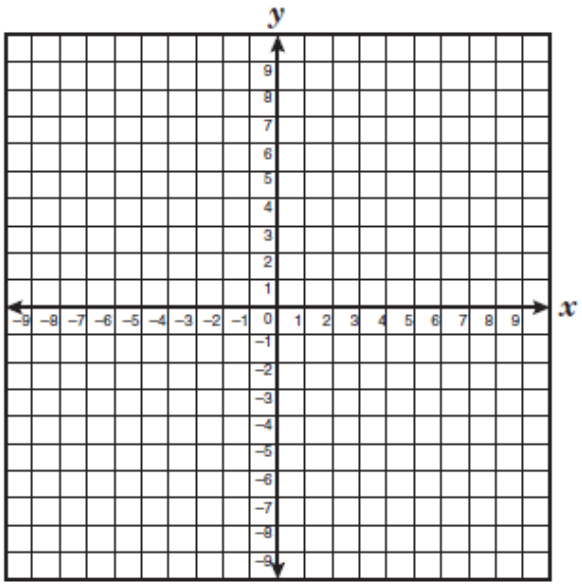
Jimmy had $5.25 in nickels and quarters. He had 45 coins altogether. How many coins of each type did he have?

Equations:_____

_____

Solution:_____

17. Which best describes the effect on the graph of f(x) = -3x – 6 if the y-intercept is changed to 4?



A. The new line passes through the origin.
B. The x-intercept increases.
C. The slope increases.
D. The y-intercept decreases.

18. Write the equation that describes the line that passes through the point (-6, 2) and is parallel to the line represented by the equation 2x – y = 4.

19. Solve the following system using matrices.

$5x - 9y = -3$

$4x - 3y = 6$

Solution:_____

20. If (x, 4) is the solution to the system of linear equations, what is the value of x?

$$4x + 5y = 8$$

$$2x - 3y = -18$$

x = _____

21. A math test has 25 problems. Some are worth 2 points, and some are worth 3 points. The test is worth 60 points total. If *x* represents the number of 2 point problems and *y* represents the number of 3 point problems, which system of equations could be used to find the number how many 3 point problems are on the test?

A. $x + y = 25$
$3x + 2y = 60$

B. $x + y = 60$
$3x + 2y = 25$

C. $x + y = 25$
$2x + 3y = 60$

D. $x + y = 60$
$2x + 3y = 25$

22. Kristi made 48 cookies. The number of chocolate chip cookies she made was 3 more than 3 times as many sugar cookies. Which system of equations can be used to find how many chocolate chip cookies, *c*, and sugar cookies, *s*, Kristi made?

A. $s + c = 48$
$c = 3s + 3$

B. $s - c = 48$
$s = 3c + 3$

C. $s + c = 3$
$c = 3s + 48$

D. $s + c = 48$
$c = 3s - 3$

23. A restaurant sold a total of 418 large and small hamburgers during one day. Total hamburger sales were $1077. Large hamburgers sold for $3, and small hamburgers sold for $1.50. How many large hamburgers were sold?

Solution:_____

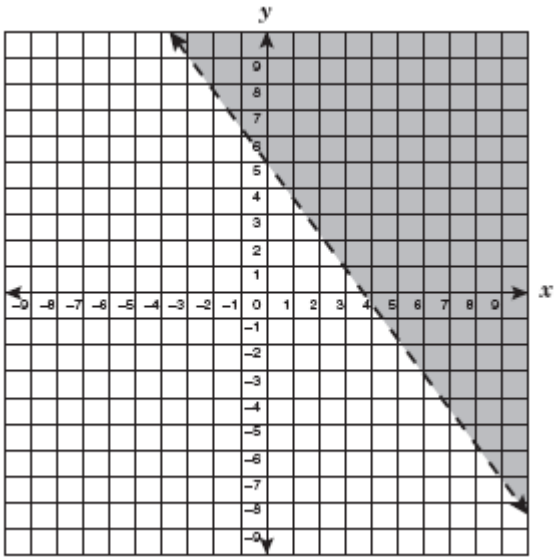
24. Which inequality best describes the graph shown below?

A. $y > -\frac{3}{4}x + 5$

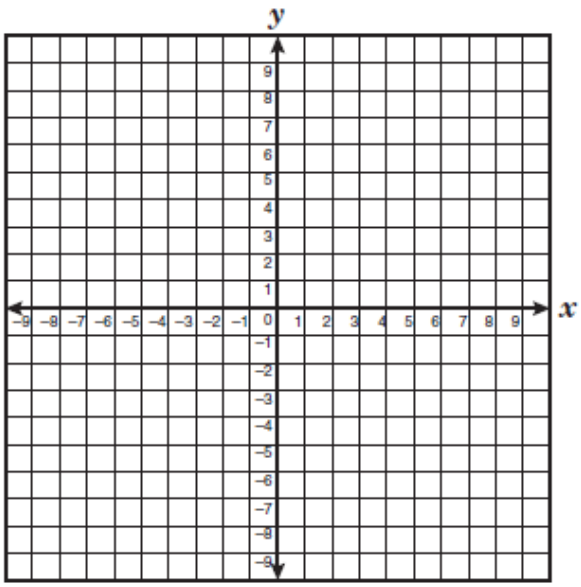
B. $y < -\frac{4}{3}x + 5$

C. $y < -\frac{3}{4}x + 5$

D. $y > -\frac{4}{3}x + 5$



25. Graph $y < x + 4$ on the grid below. Which coordinate point represents a solution of this inequality?



A. (-7, 0) B. (-1, 3) C. (3, 9) D. (2, -4)

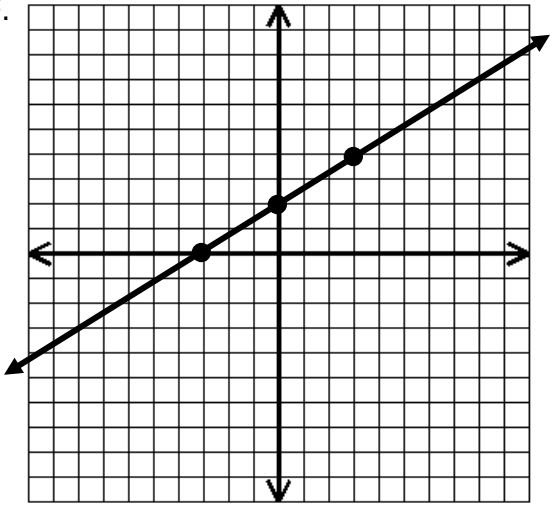
26. If (x, -3) is a solution for the following system of equations, what is the value of x?

$$4x - y = 15$$
$$y = -3x + 6$$

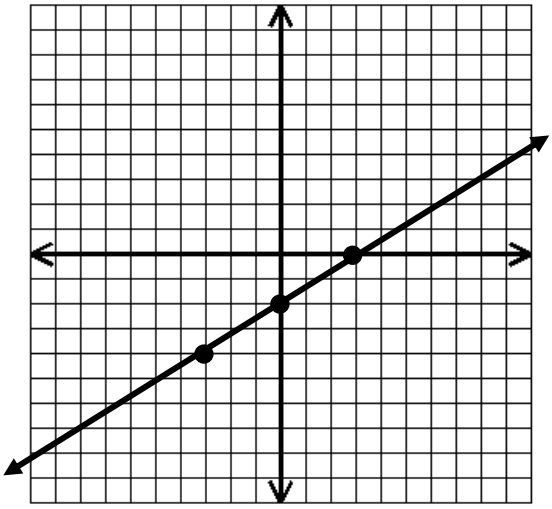
x = _____

27. Which graph represents the equation $2x - 3y = 6$?

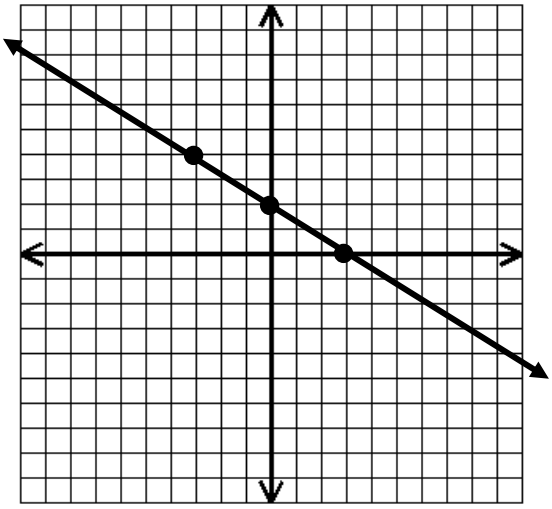
F.



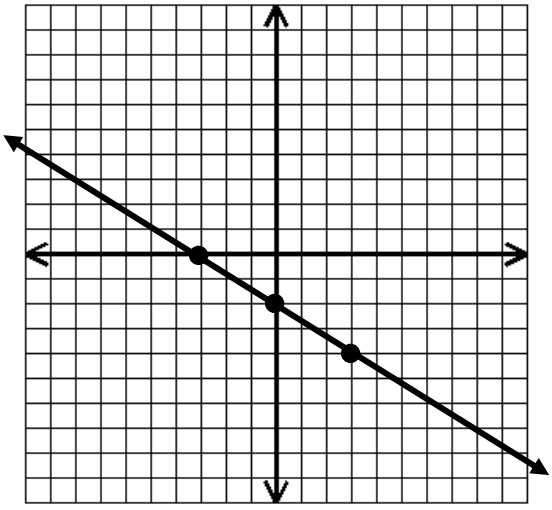
H.



G.



J.



28. Write the equation of a line that is perpendicular to $y = 5x + 4$ and goes through (15, -7)

29. The equations of two lines are **$4x - y = 5$** and **$y = -2x + 1$**. What is the value of **y** in the solution for this system of equations?

30. What does it mean if (4, 1) is a solution of the system given below?

$$y = x - 3$$
$$y = -x + 5$$

A. (4, 1) makes at least one of the equations true.

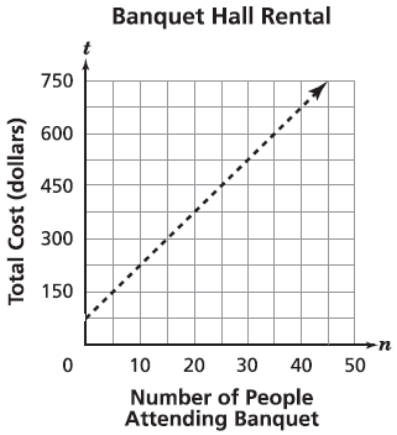
B. (4, 1) makes both of the equations true.

C. (4, 1) makes neither of the equations true.

D. (4, 1) makes exactly one of the equations true.

31. When the meter in a taxi is first turned on, it reads $2.20. As the taxi travels, $1.90 is added for each mile driven. An equation is written to find the total cost of the taxi ride, *T*, for traveling *m* miles. What is the slope of the line given by the equation?

32. The total cost for renting a banquet hall includes a one-time rental fee and a cost per person attending the banquet. The relationship between *n*, the number of people attending the banquet, and *t*, the total cost, is shown on the graph.



Which equation best represents the relationship between *n* and *t*?

F. t = -15n + 75

H. t = 15n + 75

G. t = -15n – 75

J. t = 15n – 75

Answers in random order except #2 & 10:

y = 2x + 14	y = $-\frac{1}{5}$x – 4	y = 4x – 5	no solution	0	-3	1.20
y = $\frac{5}{2}$x – 1	infinitely many	1.90	3	-1	7	30
(2, 0)	undefined	(3, 2)	(-7, -15)	2	15	300

A A B B B B C D D H H