NAME_____**DATE**_____**PER.**_____

4th Six Weeks Credit Recovery REVIEW

Making Connections

The total bill for each customer at the lemonade stand is a function of the number of glasses of lemonade purchased. This relationship can be represented by
$f(x) = \{(1, \$2.50), (2, \$5.00), (3, \$7.50), (4, \$10.00)\}$.

1. The total bill depends on _____.

2. Complete the table

Number of Glasses, x	Total Bill, y

3. The independent quantity is _____

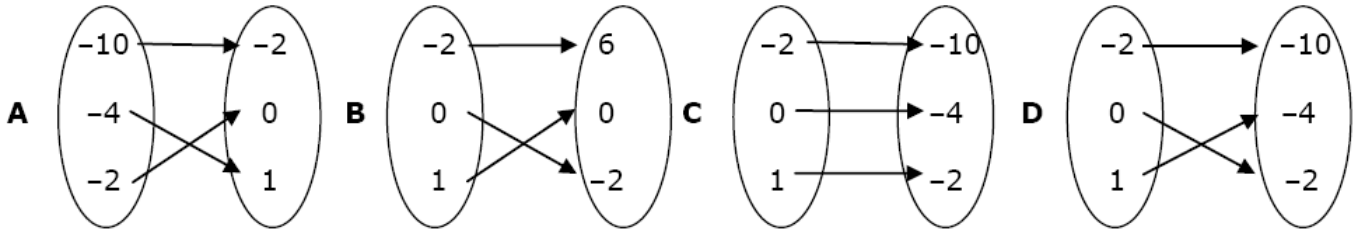
4. The dependent quantity is _____

5. Write a function to represent the relationship between "b", the total bill for "g" number of glasses.

_____

6. If the customer spent $22.50 at the lemonade stand, how many glasses of lemonade did they purchase?

7. Which mapping diagram best represents the function $f(x) = -2x^2 - 2$ when the domain of the function is {-2, 0, 1}?



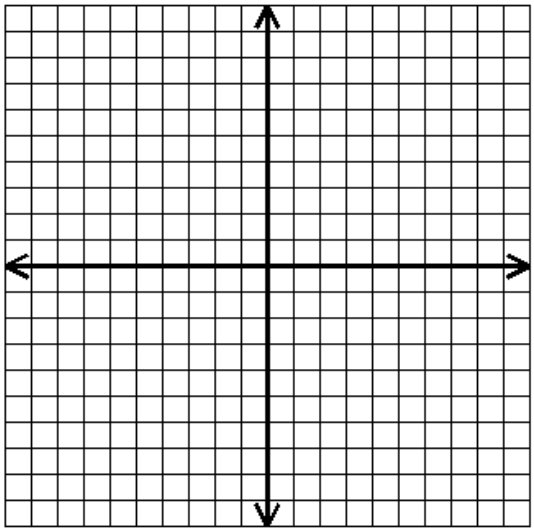
8. The table below shows the relationship between the total tuition costs, T and the number of semester hours taken at Cambridge College. Write the equation that represents this data.

Semester Hours Taken, h	Total Tuition Costs, T
3	685
6	820
9	955
12	1090

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

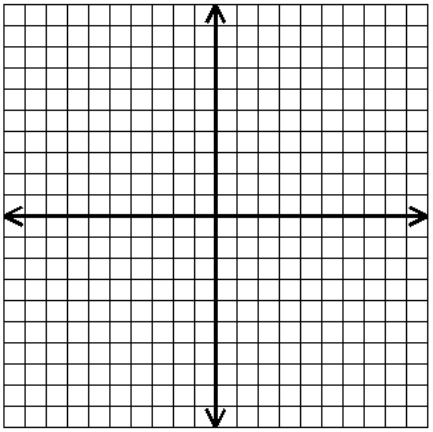
10. How many triangles would there be in the 8^{th} figure of the pattern shown in #9?

11. Graph $5x + 4y = -12$

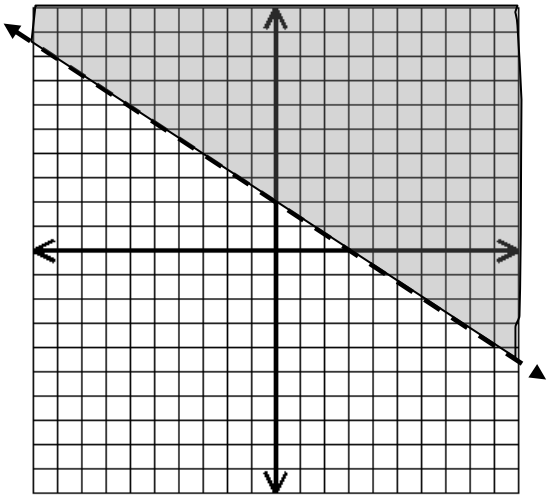


12. Find the x and y intercepts of $6x – 3y = 18$.

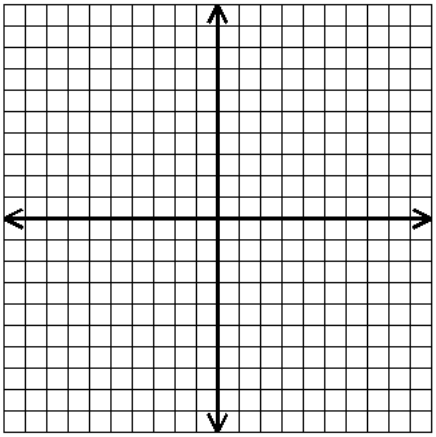
13. Graph the inequality $4x - 3y \geq -12$



14. Write the inequality that is represented by this graph.



15. Use the grid to graph $y < x + 4$. Which coordinate point represents a solution of this inequality?

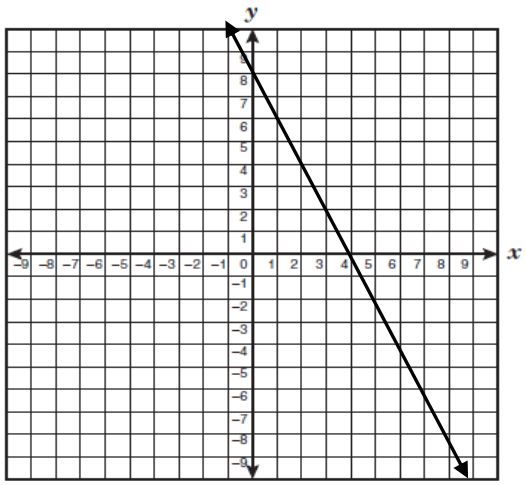


A. (-8, 2) C. (-2, 2)

B. (2, 0) D. (0, 6)

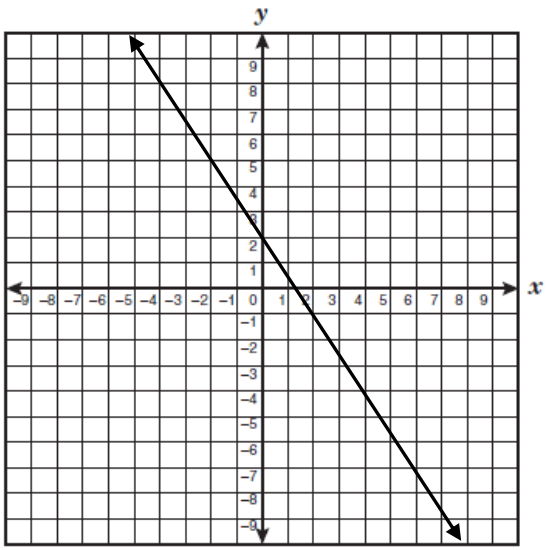
16. Write the linear function that includes the points (4, 9) and (-2, -6).

17. What is the equation of the linear function graphed below?



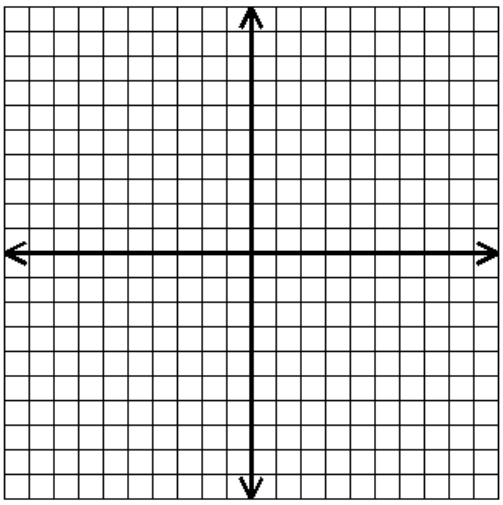
Equation: _____

18. What are the slope and y-intercept of the equation of the line graphed below?

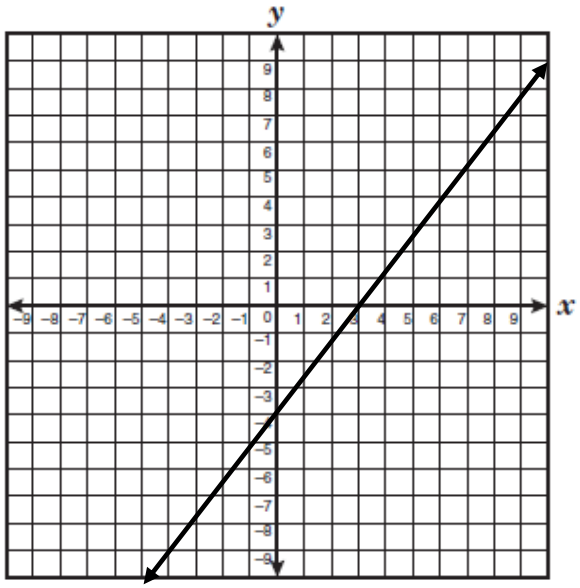


m = _____ b = _____

19. Graph $2x - 3y = 6$



20. The graph of a line is shown below.



If the slope of this line is multiplied by -2 and the y-intercept increases by 1, what is the equation of the new line?

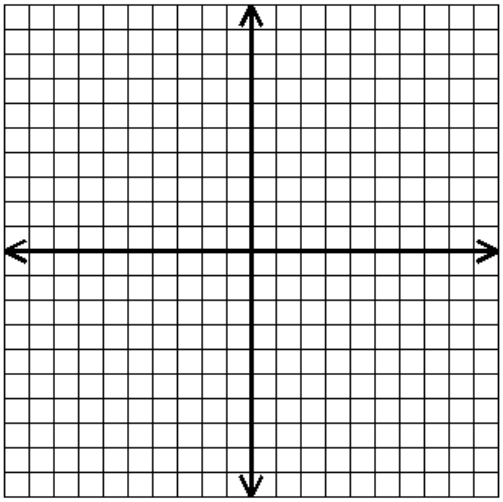
21. Write the equation of a vertical line that contains the point (-1, -9).

Systems of Equations

Solve each system by the method specified.

22. Solve by graphing.

$3x + 4y = 12$
$x + 2y = 4$



Solution:_____

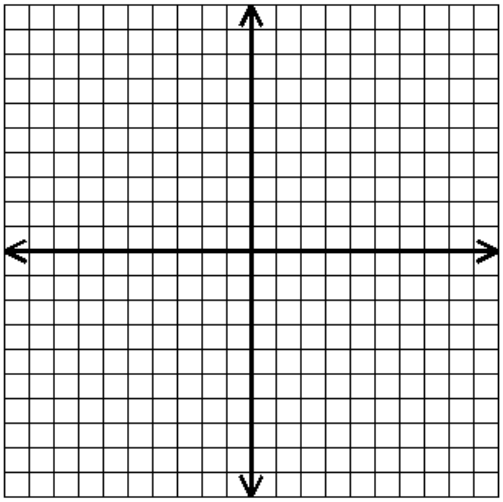
23. Solve by graphing.

$y = 3x + 4$

and

x	y
-3	-5
-1	1
1	7
3	13

Equation (from table):_____



Solution:_____

24. Solve using matrices.

$2x + 5y = 17$

$6x – 5y = -9$

Solution:_____

25. Solve using matrices.

$5x – 9y = -3$

$4x – 3y = 6$

Solution:_____

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

$$y = 2x - 1$$
$$3x - y = -6$$

For each word problem, set up a system of equations, and solve for the value(s) indicated.

27. If 8 pens and 7 pencils cost $3.37 while 5 pens and 11 pencils cost $3.10, how much does each pen and pencil cost?

Equations:_____

_____

Solution:_____

28. Timmy has 180 marbles, some plain and some colored. If there are 32 more plain marbles than colored marbles, how many colored marbles does he have?

Equations:_____

_____

Solution:_____

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

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

30. Holt bought a large pizza and a liter of drink for $11, not including tax. If the price of the pizza, *p*, is 5 more than 3 times the price of the drink, *d*, **write the system of linear equations** that could be used to find the cost of the pizza and the drink. (do not solve)

Equations:_____

_____

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

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

Polynomials & Factoring

Answer the following.

33. Simplify the algebraic expression $4(x^2 – 4x + 6) – 2x(x – 5)$.

_____

34. Find the perimeter of the triangle whose sides are $5x^2 + 6x – 1$, $3x^2 – 2x – 4$, and $x^2 –x + 7$.

_____

35. Find the product $(4x – 3)(6x + 1)$.

_____

36. A rectangle has a width of $3x + 4$ and a length of $2x – 5$, find the expression that would represent the area of the rectangle.

_____

Factor completely.

37. $x^2 + 3x – 18$

38. $a^2 – 144$

39. $2a^3 + 8a^2 – 18a$	40. $3x^2 – 12x – 36$
41. $x^2 + 16x + 48$	42. $x^2 – 19x + 78$
43. $3a^2 – 243$	44. $6x^2 + 30x – 42$
45. $x^2 + 4x – 21$	

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