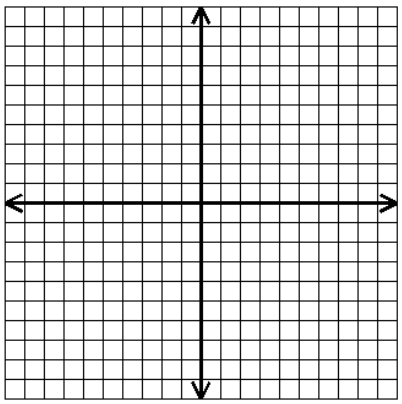
Algebra 1 **Name:** **Date:** **Block:**
Unit 6 Test

Solve each system of equations *<u>by the method indicated</u>* (Q#1-4).

1. Solve by graphing: $y = x - 1$
$2x + y = 8$



Solution: _____

2. Solve by substitution: $x = 3y + 4$
$3x - 5y = 8$

Solution: _____

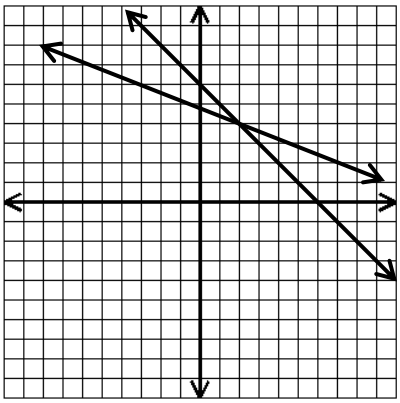
3. Solve by elimination: $2x + 5y = -2$
$-2x - 7y = 6$

Solution: _____

4. Solve by elimination: $5x + 2y = 7$
$7x + 6y = -3$

Solution: _____

5. Based on the graph of the following system, determine the solution: _____
Explain how you know.

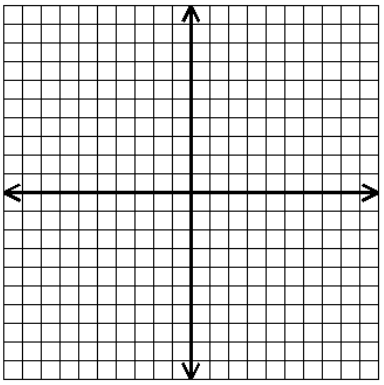


6. What is the solution to the system represented by the table below? Write your answer as an ordered pair. Solution: _____
Explain how you know.

x	y_1	y_2
−2	8	7
−1	6	6
0	4	5
1	2	4
2	0	3

7. Choose ***<u>any method</u>*** to solve the following system. (The grid is provided **if** you choose graphing as your method.)

$3x + y = 6$
$x + 4y = -20$



Solution: _____

8. Determine if the point $(4, -3)$ is a solution to the following system:

$x - y = 4$
$2x + y = 5$ **YES / NO**

<u>Without</u> solving the system, determine whether the following systems have one solution, no solution, or many solutions <u>and</u> explain how you know.

9. $-8x + 2y = -16$
$4x - y = 10$

10. $3x + y = 2$
$-9x + 3y = -6$

Set up a system of equations needed to solve each problem. Do NOT solve.

11. You have 42 coins valued at $3.00. Some of the coins are dimes and some are quarters. Find the number of each you have.

12. At the baseball stadium, four hot dogs and three bags of candy cost $14.37. Twelve hot dogs and nine bags of candy cost $24.74. What does a hot dog cost?

Set up a system of equations needed to solve each problem. Solve by the method of your choice.

13. The perimeter of a rectangular field is 76ft. The length is 12ft longer than the width. Find the field's dimensions.

14. Your teacher announced a 50 point math quiz for tomorrow. The quiz will have 15 questions with some questions worth 4 points each and some 3 points each. Find the number of 4 point questions.

Multiple Choice.

15. Two lines have the following equations: $4x + 3y = 7$
$x + 2y = -2$

At what point do they intersect?

A. (1, 1) B. (0, −1) C. (4, −3) D. (6, −4)

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16. Beth bought 15 tickets to a movie, where adult tickets cost $6.00 and senior citizen tickets cost $4.00. She spent a total of $76. Which system of equations will determine the number of adult tickets, *a*, and the number of senior citizen tickets, *s*, Beth purchased?

A. $a + s = 15$
$10as = 76$

B. $a + s = 15$
$6a + 4s = 76$

C. $a + s = 15$
$4a + 6s = 76$

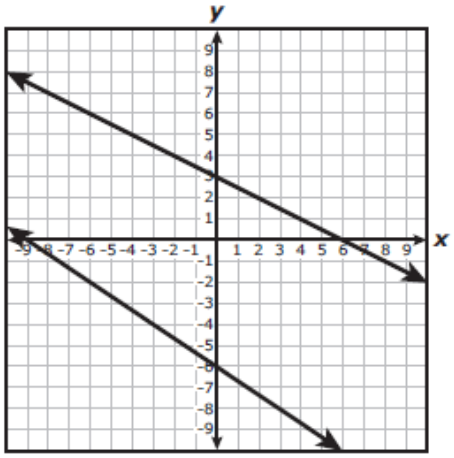
D. $a + s = 15$
$a + s = 76$

E. $a + s = 76$
$6a + 4s = 15$

17.

Which of the following graphs best represents a system of equations that has no solution?

A



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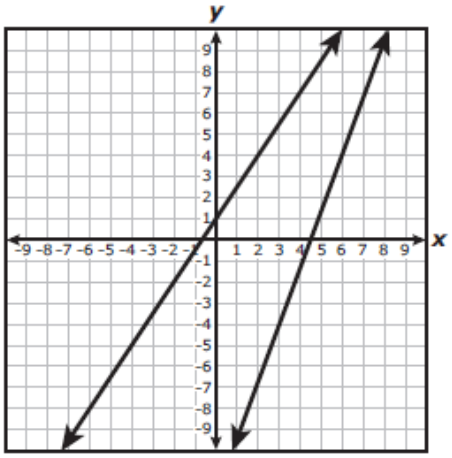
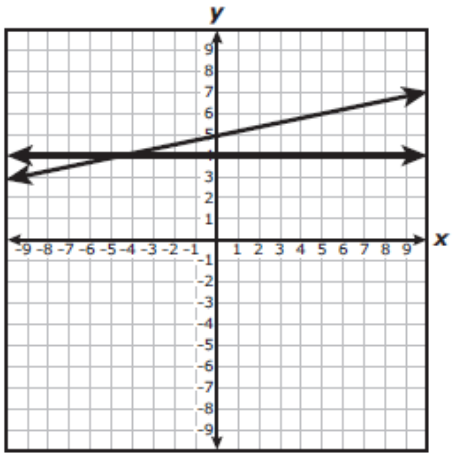
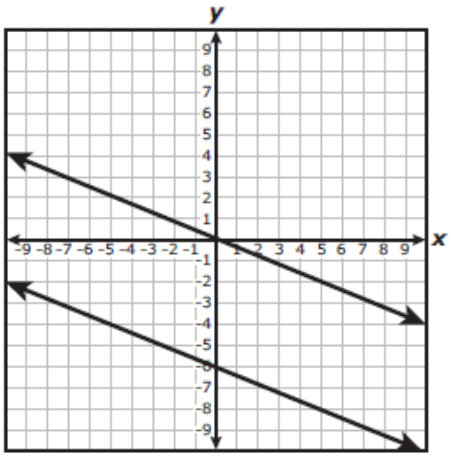


B



D



18. What is the value of x in the solution to the system of equations below?

$$6x + 3y = 33$$
$$3x - y = 4$$

A. 1 B. 5 C. 3 D. None of these

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

Equation 1

x	y
2	5
−4	−7
5	11
−1	−1

Equation 2

x	y
5	11
−3	−13
0	−4
1	−1

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

A. (2, 3) B. (3, 5)

C. (−1, 1) D. (5, 11)

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20. A craft store has 12 identical sacks of loose buttons. Each button is perfectly circular and is either solid black, b, or solid white, w. Each sack contains 9 more black buttons than white ones. The total number of buttons in all of the sacks is 372. The number of buttons of each color in 1 sack can be found by using the following system of equations: $b - w = 9$

$$12(b + w) = 372$$

Which ordered pair, (b, w), is a reasonable solution for the number of buttons of each color in 1 sack?

A. (11, 2) B. (20, 11) C. (29, 20) D. (15, 6)

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21. The graph below shows the distance of two cars from Dallas over a four hour period. Car A is driving toward Dallas, and Car B is driving away from Dallas. Based on the graph, how far from Dallas will the two cars be when they are the same distance from the city? Record and bubble your answer on the grid.