

Name: _____ Date: _____

Solving Systems of Equations by Elimination Homework

Solve each of the following using the method of elimination:

1.
$$\begin{array}{r} x - y = 7 \\ 2x + y = -10 \\ \hline 3x = -3 \\ x = -1 \end{array}$$

$$\begin{array}{r} -1 - y = 7 \\ -y = 8 \\ y = -8 \end{array}$$

(-1, -8)

2.
$$\begin{array}{r} 2x + y = 11 \\ x + y = 9 \\ \hline x = 2 \end{array}$$

(2, 7)

3.
$$\begin{array}{r} 3(3x + y = 1) \\ 2x + 3y = -11 \\ \hline 9x + 3y = 3 \\ 2x + 3y = -11 \\ \hline -7x = -14 \\ x = 2 \end{array}$$

$$\begin{array}{r} 3(2) + y = 1 \\ 6 + y = 1 \\ y = -5 \end{array}$$

(2, -5)

4.
$$\begin{array}{r} x + y = 1 \\ 3x - y = 11 \\ \hline 4x = 12 \\ x = 3 \end{array}$$

(3, -2)

5.
$$\begin{array}{r} 9x + 2y = 2 \\ -2(4x + y = 1) \\ \hline 9x + 2y = 2 \\ -8x - 2y = -2 \\ \hline x = 0 \end{array}$$

$$\begin{array}{r} 4(0) + y = 1 \\ y = 1 \end{array}$$

(0, 1)

6.
$$\begin{array}{r} 2x + 3y = 8 \\ 5x - y = 3 \\ \hline 13x = 14 \\ x = 1 \end{array}$$

(1, 2)

7.
$$\begin{array}{r} 2(5x - 3y = -14) \\ 3(3x + 2y = 3) \\ \hline 10x - 6y = -28 \\ 9x + 6y = 9 \\ \hline 19x = -19 \\ x = -1 \end{array}$$

$$\begin{array}{r} 3(-1) + 2y = 3 \\ -3 + 2y = 3 \\ 2y = 6 \\ y = 3 \end{array}$$

(-1, 3)

8.
$$\begin{array}{r} 9x + 6y = 12 \\ 8x + 3y = 13 \\ \hline x = 2 \end{array}$$

(2, -1)

9.
$$\begin{array}{r} 3(3x + 2y = 6) \\ 2(2x - 3y = 17) \\ \hline 9x + 6y = 18 \\ 4x - 6y = 34 \\ \hline 13x = 52 \\ x = 4 \end{array}$$

$$\begin{array}{r} 3(4) + 2y = 6 \\ 12 + 2y = 6 \\ 2y = -6 \\ y = -3 \end{array}$$

(4, -3)

Find and describe the error:

13.
$$\begin{array}{r} 5x + 8y = 1 \\ 2x - 8y = 6 \\ \hline 7x = 7 \\ x = 1 \end{array}$$

$$\begin{array}{r} -2(1) + 8y = -6 \\ -2 + 8y = -6 \\ -2 \quad -2 \\ \hline 8y = -8 \\ y = -1 \end{array}$$

(1, -1)

Multiplied -2 by 1 and got 2, not -2.

14.
$$\begin{array}{r} 3x - 4y = -5 \\ -3x - 6y = -5 \\ \hline -2y = -10 \\ y = 5 \end{array}$$

$$\begin{array}{r} 3x - 4(5) = -5 \\ 3x - 20 = -5 \\ +20 \quad +20 \\ \hline 3x = 15 \\ x = 5 \end{array}$$

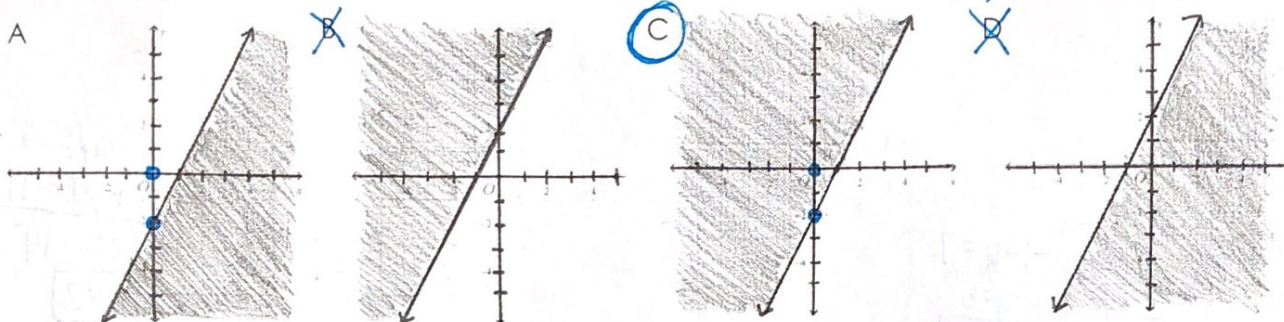
(5, 5)

Review

$m = \frac{2}{1}$ $b = -2$

15. Which graph correctly represents the following inequality? $y \geq 2x - 2$

$0 \geq 2(0) - 2$ $0 \geq -2$ ✓



Determine if $(-1, 3)$ is a solution to the following system of equations. Answer **yes** or **no**.

16. $2x + 2y = 4$
 $3x - y = -6$

$2(-1) + 2(3) = 4$
 $-2 + 6 = 4$
 $4 = 4$
✓

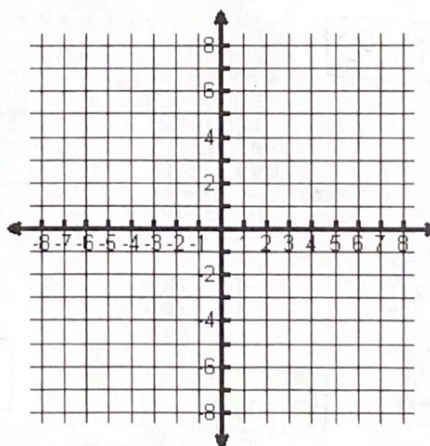
$3(-1) - (3) = -6$
 $-3 - 3 = -6$
 $-6 = -6$
✓

Yes!

Determine whether the following systems have no solution, one solution, or infinitely many solutions. You may use the graph provided if needed.

17. $y = 5x - 4$
 $y = 5x - 5$

- A. No solution
- B. One solution
- C. Infinitely many solutions



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

- A. No solution
- B. One solution
- C. Infinitely many solutions

Solve the following by substitution.

19. $y = 2x + 3$
 $y = 3x + 1$

$3x + 1 = 2x + 3$
 $x = 2$

$3(2) + 1 = 7$
 $y = 7$

- A. $(-2, -1)$
- B. $(-1, -2)$
- C. $(2, 7)$
- D. $(-2, -5)$

20. $3y = -\frac{1}{2}x + 2$
 $y = -x + 9$

- A. $(3, 6)$
- B. $(20, -4)$
- C. $(10, -1)$
- D. $(-1, 8)$