

Name Key
Mrs. RoubosDate _____
8R Period _____

Classwork Day 4

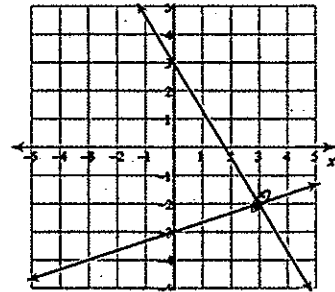
1. How many solutions does the following equation have?

$$\begin{array}{r} 3x + 6 = 3x + 7 \\ -3x \quad -3x \\ \hline 6 \neq 7 \end{array}$$

NONE / ZERO / NO SOLUTIONS

**Steps: You must move the variables first * There are NO solutions
when they are \neq

2. What is the solution to the system of equations is graphed on the set of axes shown?

(3, -2)

**Steps: The solution is the point where the lines intersect.

3. Does (4, 6) lie on the graph of the equation $y = 2x - 2$?

xy

$$6 = 2(4) - 2$$

$$6 = 8 - 2$$

$$6 = 6 \text{ yes}$$

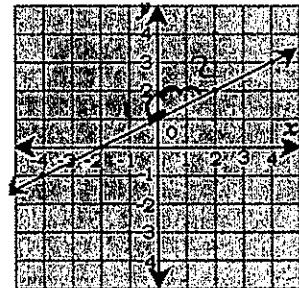
USE PEMDAS

**Steps: Substitute the coordinates (x, y) into the equation + simplify to see if the two sides are =

4. What is the ~~slope~~ of line l shown in the accompanying diagram?

Rate of change

$$m = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \boxed{\frac{1}{2}}$$



**Steps: find the rise (change in y) + the run (change in x)
+ Make a fraction

5. What is the equation for the line passing through the points (7, 0) and (0, 8) → y-intercept

$$y = mx + b$$

$$m = \frac{-8}{7}$$

$$b = 8$$

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad m = \frac{8 - 0}{0 - 7} \quad m = -\frac{8}{7}$$

$$y = -\frac{8}{7}x + 8$$

**Steps: determine the slope (m) + the y-intercept (b), write in $y = mx + b$ form

6. Solve the following system for x & y.

$$\begin{array}{r} 8x + 3y = 5 \\ + 2x - 3y = 5 \\ \hline 10x = 10 \\ \frac{10x}{10} = \frac{10}{10} \\ x = 1 \end{array}$$

Need additive inverses

$$\begin{array}{r} 8x + 3y = 5 \\ 8(1) + 3y = 5 \\ 8 + 3y = 5 \\ -8 \quad -8 \\ \hline 3y = -3 \\ \frac{3y}{3} = \frac{-3}{3} \\ y = -1 \end{array}$$

$$(1, -1)$$

**Steps: Add the 2 equations to solve for x. Then substitute back in to solve for y.

7. Solve for x:

$$\begin{array}{r} 6.2x + 8.7 = 1.8x + 43.9 \\ -1.8x \quad -1.8x \\ \hline 4.4x + 8.7 = 43.9 \\ -8.7 \quad -8.7 \\ \hline 4.4x = 35.2 \\ \frac{4.4x}{4.4} = \frac{35.2}{4.4} \\ x = 8 \end{array}$$

Distribute (multiply)
Combine like terms (on same side of =)
Move smaller to larger variable
Solve remaining equation

**Steps: DCMS

8. If Nick walks at a speed of 12.8 miles in 4 hours, how many miles does Nick walk per hour?

$$\frac{\text{mi}}{\text{hr}} = \frac{12.8}{4} = \boxed{3.2 \text{ mph}}$$

**Steps: Create a fraction for mph $\frac{\text{miles}}{\text{hour}}$ (Divide #'s)

9. What is the solution to the equation below?

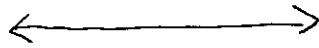
Use A%
button

$$\begin{aligned} \frac{3}{8}(8x-16) &= 6 \\ 3x - 6 &= 6 \\ \frac{+6}{+6} & \\ \hline 3x &= 12 \\ \frac{\div 3}{\div 3} & \\ \hline x &= 4 \end{aligned}$$

A parentheses means to distribute.

**Steps: DCMS

10. Draw a line with a slope of zero.



**Steps: a line with a slope of zero is a horizontal line

Now you try!

11. How many solutions does the following equation have?

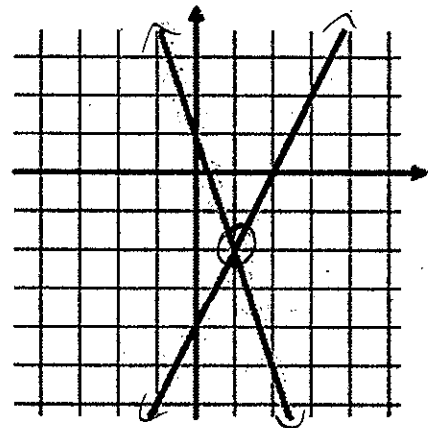
$$\begin{aligned} 2x + 5 &= 2x + 4 \\ \frac{-2x}{-2x} & \quad \frac{-2x}{-2x} \end{aligned}$$

$$5 \neq 4$$

NO SOLUTIONS zero / NONE

12. What is the solution to the system of equations is graphed on the set of axes shown?

(1, -2)



13. Does (2,4) lie on the graph of the equation $y = 3x - 2$?

x, y

$$4 = 3(2) - 2$$

$$4 = 6 - 2$$

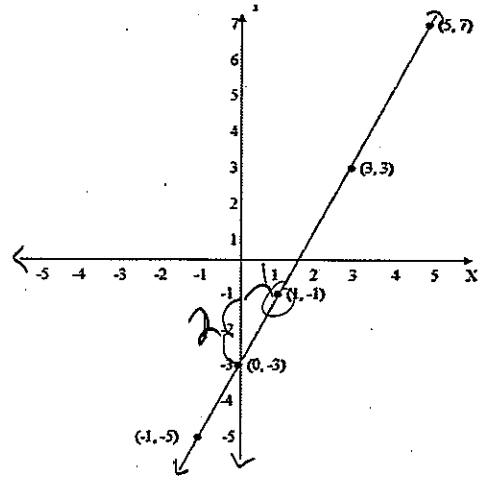
$$4 = 4$$

✓

yes it does

14. What is the slope of line l shown in the accompanying diagram?

$$\frac{\Delta y}{\Delta x} \quad m = \frac{\text{rise}}{\text{run}} \quad \frac{2}{1} = \boxed{2}$$



15. What is the equation for the line passing through the points $(4, 0)$ and $(0, 6)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad m = \frac{6 - 0}{0 - 4} \quad m = \frac{6}{-4} \quad m = -\frac{3}{2}$$

$$y = mx + b$$

$$m = -\frac{3}{2}$$

$$b = 6$$

$$\boxed{y = -\frac{3}{2}x + 6}$$

16. Solve the following system for x & y .

$$\begin{array}{r} 4x + 2y = 10 \\ + 2x - 2y = 8 \\ \hline 6x = 18 \\ \frac{6x}{6} = \frac{18}{6} \\ x = 3 \end{array}$$

$$\begin{array}{r} 4x + 2y = 10 \\ 4(3) + 2y = 10 \\ 12 + 2y = 10 \\ -12 \quad -12 \\ \hline 2y = -2 \\ \frac{2y}{2} = \frac{-2}{2} \\ y = -1 \end{array}$$

$$\boxed{(3, -1)}$$

17. Solve for x :

$$\begin{array}{r} 4.2x + 6.4 = 1.1x + 12.6 \\ -1.1x \quad -1.1x \\ \hline 3.1x + 6.4 = 12.6 \\ -6.4 \quad -6.4 \\ \hline 3.1x = 6.2 \\ \frac{3.1x}{3.1} = \frac{6.2}{3.1} \end{array}$$

$$\boxed{x = 2}$$

18. If Mary walks at a speed of 27 miles in 6 hours, how many miles does Mary walk per hour?

$$\frac{\text{mi}}{\text{hr}} \quad \frac{27}{6} = \boxed{4.5 \text{ mph}}$$

19. What is the solution to the equation below?

$$\frac{2}{6}(6x-18)=10$$

$$\begin{array}{r} 2x - 6 = 10 \\ +6 \quad +6 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{16}{2}$$

$$\boxed{x=8}$$

Distribute

20. Which of the lines below has a slope of zero?

