Ready, Set, Go!

Ready

Topic: Determine if given values are solutions to an equation

Determine whether each of the given points are solutions to the following linear equations.

1. $3x + 2y = 12$
   a. $(2, 4)$
   b. $(3, 2)$
   c. $(4, 0)$
   d. $(0, 6)$

2. $5x - y = 10$
   a. $(2, 0)$
   b. $(3, 0)$
   c. $(0, -10)$
   d. $(1, 1)$

Find the value that will make each ordered pair a solution to the given equations.

3. $x + y = 6$
   a. $(2, \_\_)$
   b. $(0, \_\_)$
   c. $(\_\_, 0)$

4. $2x + 4y = 8$
   a. $(2, \_\_)$
   b. $(0, \_\_)$
   c. $(\_\_, 0)$

5. $3x - y = 8$
   a. $(2, \_\_)$
   b. $(0, \_\_)$
   c. $(\_\_, 0)$

Set

Topic: Graph linear inequalities

Graph the following inequalities on the coordinate plane. Plot points to make sure the correct region is shaded.

6. $y \leq 4x + 3$

7. $x < 20$

8. $y > -\frac{x}{2} - 6$

9. $y \geq -5$

Go

Topic: Solve inequalities

Follow the directions for each problem below.

10. $14 - 2x < 20$

a. Solve for x.

b. Draw a number line below, and show where the solution set to this problem is.

c. Pick an x—value which, according to your drawing, is *inside* the solution set. Plug it into the original inequality $14 - 2x < 20$. Does the inequality hold true?

d. Pick an x—value which, according to your drawing, is *outside* the solution set. Plug it into the original inequality $14 - 2x < 20$. Does the inequality hold true?

6. $x - 2y \geq 4$

a. Solve for y.

b. Now—for the moment—let's pretend that your equation said *equals* instead of "greater than" or "less than." Then it would be the equation for a line. Find the slope and the y—intercept of that line, and graph it.

Slope: _____

y—Intercept: _____

c. Now, pick any point (x, y) that is *above* that line. Plug the x and y coordinates into your inequality from part (a). Does this point fit the inequality? (Show your work...)

d. Now, pick any point (x, y) that is *below* that line. Plug the x and y coordinates into your inequality from part (a). Does this point fit the inequality? (Show your work...)

e. So, is the solution to the inequality the points *below* or *above* the line? Shade the appropriate region on your graph.

Need help? Check out these related videos:

http://www.khanacademy.org/math/algebra/linear-equations-and-inequalitie/v/graphing-linear-inequalities-in-two-variables-2