

October 10, 2011

**No Warm-Up - test v**

**Get out review to score...**  
**page 115 #9-34,**  
**37-46 all**

## 10/10 - Solving Linear Systems by Graphing

What is a linear system? *At least 2 lines on the same graph*

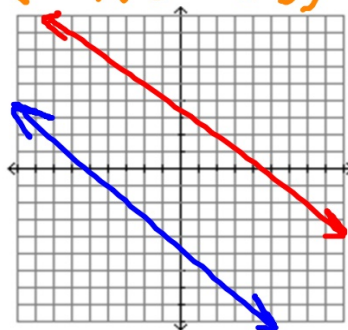
What do the answers look like? *one point, no points, infinite answers*

3 possibilities:

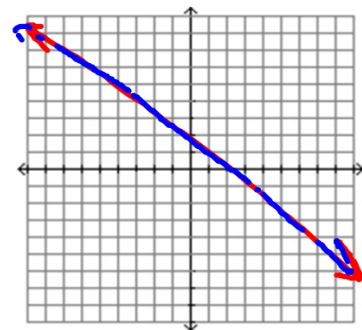
*One point  
(intersecting lines)*



*no points  
(2 || lines)*



*Infinite answers  
(same line)*



Is the given point a valid solution to the system?

(1,3)

$$\begin{cases} \underline{5x - 3y = -4} \\ \underline{x + 2y = 7} \end{cases}$$

Plug it into  
both equations.

$$\begin{aligned} 5x - 3y &= -4 \\ 5(1) - 3(3) &= -4 \\ 5 - 9 &= -4 \end{aligned}$$

True

$$\begin{aligned} x + 2y &= 7 \\ (1) + 2(3) &= 7 \\ 1 + 6 &= 7 \end{aligned}$$

True

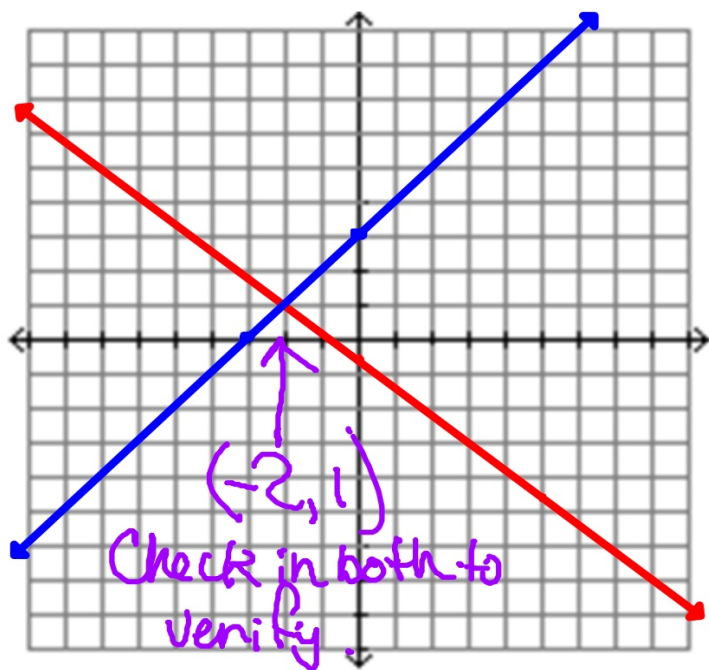
Yes - the point is on both lines

Solve this system by graphing:

$$\begin{cases} 4x + 5y = -3 \\ 4(-2) + 5(1) = -3 \quad \checkmark \\ -x + y = 3 \\ -(-2) + 1 = 3 \quad \checkmark \end{cases}$$

$$\begin{array}{r} 4x + 5y = -3 \\ -4x \qquad -4x \\ \hline 5y = -4x - 3 \\ \frac{5y}{5} = \frac{-4x - 3}{5} \\ y = \frac{-4}{5}x - \frac{3}{5} \end{array}$$

$$-x + y = 3$$



## Look for patterns...

$$\begin{cases} 3x - 4y = 5 \\ -2x + y = -5 \end{cases}$$

no pattern

intersecting  
lines

One answer  
(a point)

$$\begin{cases} 3x - 4y = 5 \\ -3x + 4y = -5 \end{cases}$$

all opposites  
one x by one y

same line

Every point  
on the line

$$\begin{cases} 3x - 4y = 5 \\ -3x + 4y = 5 \end{cases}$$

Variables  
have a pattern  
Constant doesn't  
have the same  
pattern.

parallel  
lines

No solution

# Homework:

Page 125

#8-18, 26-35 even

Due tomorrow