Welcome to class!

1. True or false: If two lines are **not** parallel, will they always intersect?
2. Graph the following two equations on the same coordinate plane:
   y = x + 1 and y = - x + 3

Announcements

- Upcoming Unit
  - Friday 11/30 - Systems of Equations (Graphing and Substitution)
  - Monday 12/3 - Systems of Equations (Elimination)
  - Tuesday 12/4 - Informal Project about Systems of Equations
  - Wednesday 12/5 - Systems of Equations (Word Problems)
  - Thursday 12/6 - Review Day
  - Friday 12/7 - Test
  - Monday 12/10 - MALM Project Day

Solving Systems of Equations
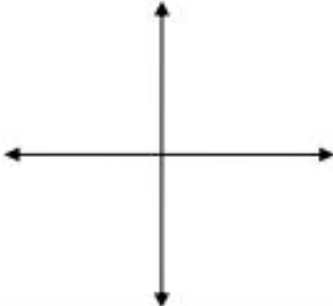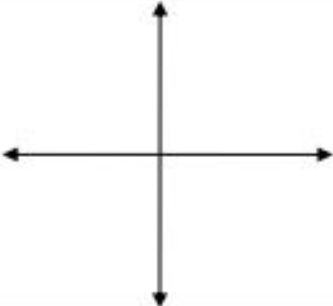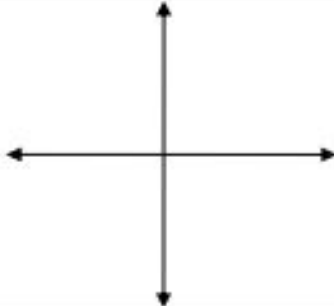## (Graphing and Substitution)

11/30/2018

Let's just talk about it first...

So first let's solve by graphing...

Systems of Equations: A set of two or more equations using the same variables.
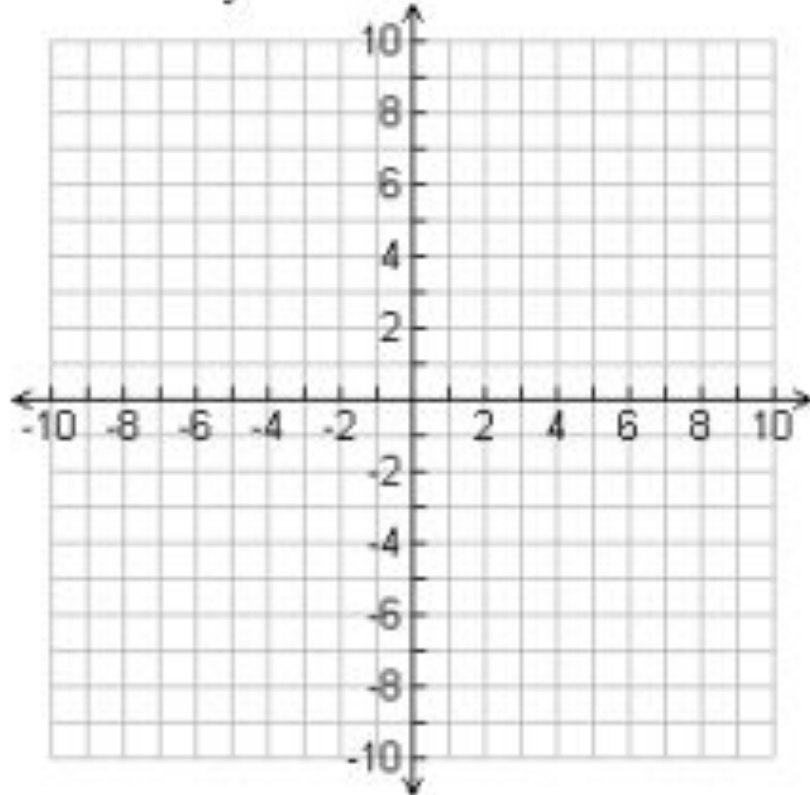
Solving Systems by Graphing (two variables only)
You can solve a system of equations with two variables (x and y) by graphing the equations set equal to _____.

Name:	Name:	Name:
Solution:	Solution:	Solution:

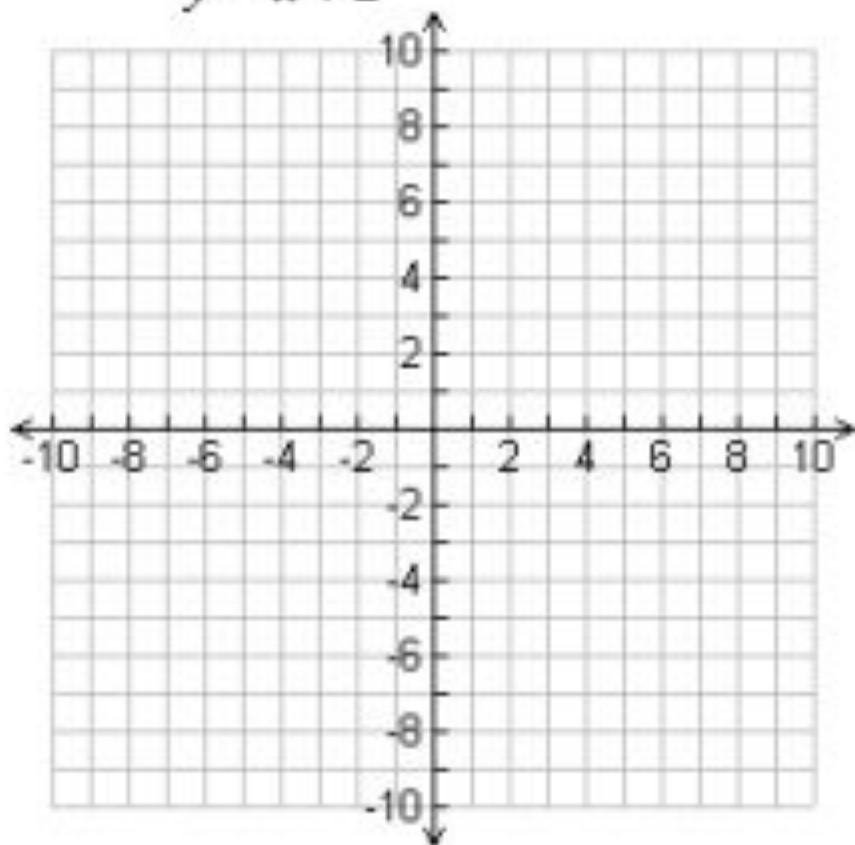a) What is the solution of the system? Use a graph.

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

b) What is the solution of the system? Use a graph.

$$y = 2x + 4$$
$$y = x + 2$$
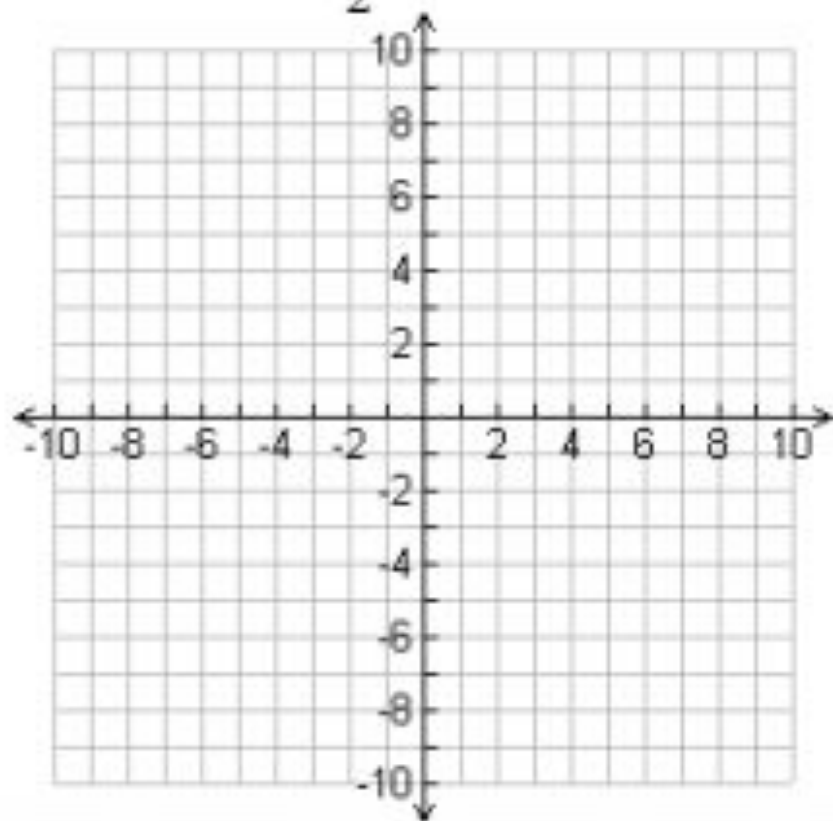
a) What is the solution of the system? Use a graph.
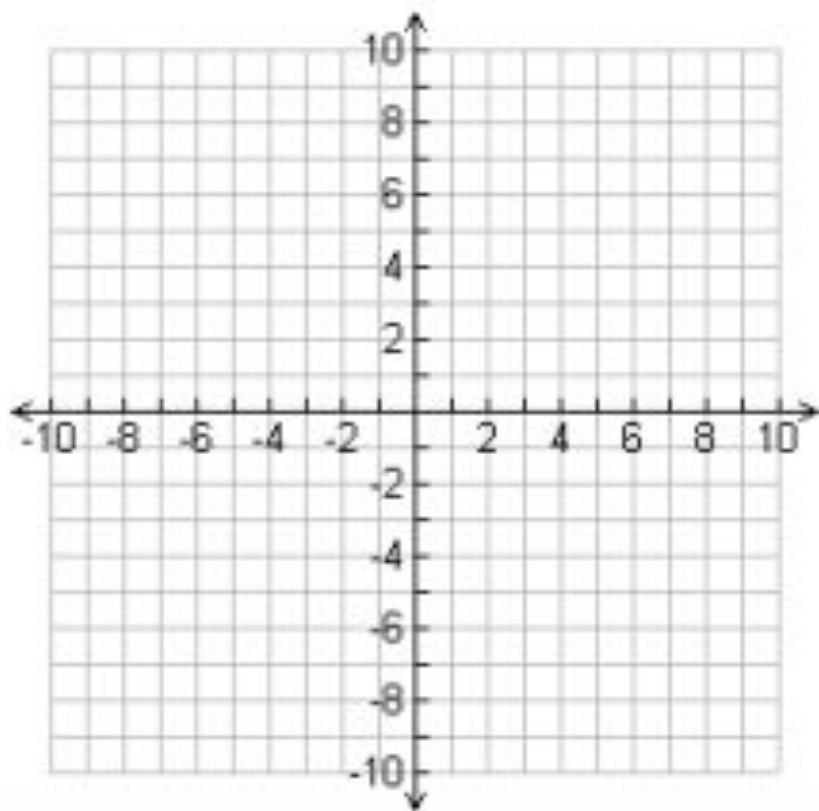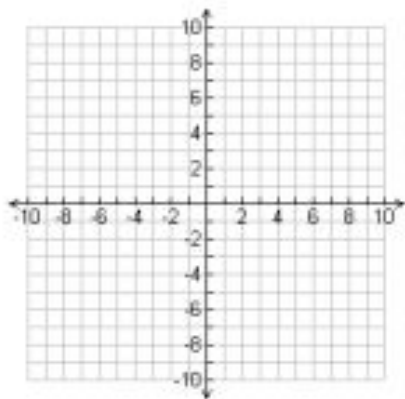
$$2y - x = 2$$
$$y = \frac{1}{2}x + 1$$

b) What is the solution of the system? Use a graph.
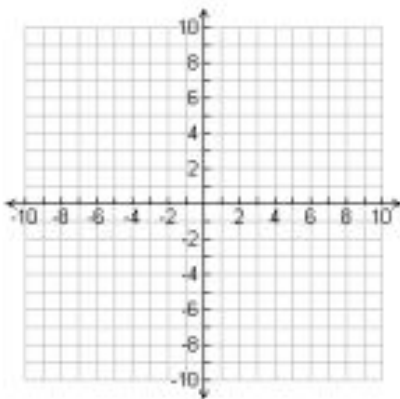
$$y = 2x + 2$$
$$y = 2x - 1$$

You try

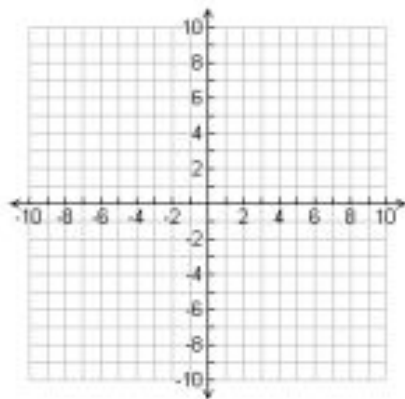**Lesson Check**: Solve by graphing.

1. $y = x + 7$
   $y = 2x + 1$

2. $y = -x - 4$
   $4x - y = -1$

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

Using the Graphing Calculator

1. Put one equation into Y1
2. Put the other equation into Y2
3. Graph it
4. 2nd Trace Intercet
5. First Curve? Second Curve? Guess?

So graphing isn't always great because the intersection might be a fraction… so we need another way.

That's where substitution and elimination come into play.   Today we will look at substitution. (Elimination is Monday!)

Substitution

To solve by substitution, solve one equation for a variable and then plug that into the other equation.

$y=3x+4$

$2x+3y=8$

Solve with Substitution

$x = -2y + 4$

$3.5 x + 7 y = 14$

You try

y = 3x - 11

y - 3x = -13

Tonight's Homework

Page 363 # 11-17 odd, 22-24 all

Page 371 #11-17 odd, 26-28 all