December 7

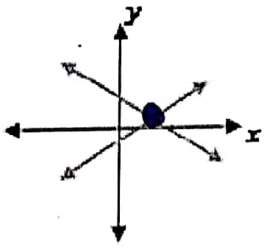
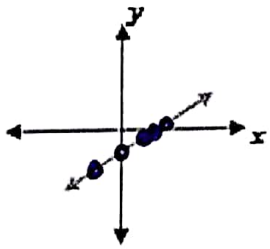
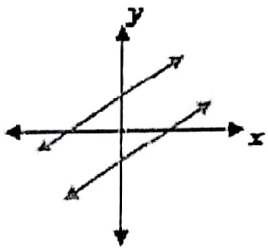
GUIDED NOTES: Solve Systems of Equations by Graphing

A system of equations is two or more equations with the same variables.

A solution of a system of equations is a set of values for the variables that makes all the equations true. Basically, the solution satisfies ALL the equations involved!

You can solve some linear systems by graphing the equations. Therefore, your solution is the point of intersection in the form (x, y).

Systems of Equations

Graph of a System			
Number of Solutions	One	Infinitely Many	Zero
	(x,y)	"many solutions" exact same line	"no solution" parallel lines

EX1. Solve the system of equations by graphing:

$2x + y = 5$

$x - y = 1$

$2x + y = 5$

$-2x \quad -2x$

$y = 5 - 2x$

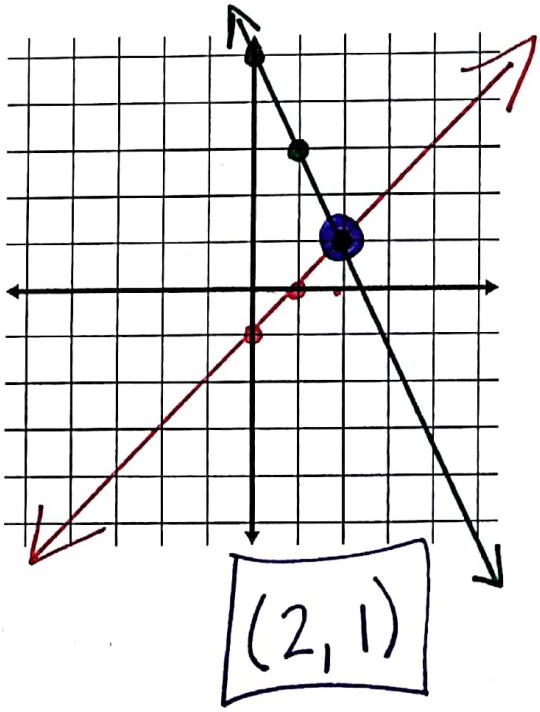
$x - y = 1$

$-x \quad -x$

$-y = 1 - x$

$-1 \quad -1$

$y = -1 + x$



(2, 1)

EX2. Solve the systems of equations by graphing:

$x - 2y = 0$ ●

$3x + 3y = 18$ ●

$x - 2y = 0$

$-x \quad\quad -x$

$-2y = 0 - 1x$

$\frac{-2y}{-2} = \frac{0 - 1x}{-2}$

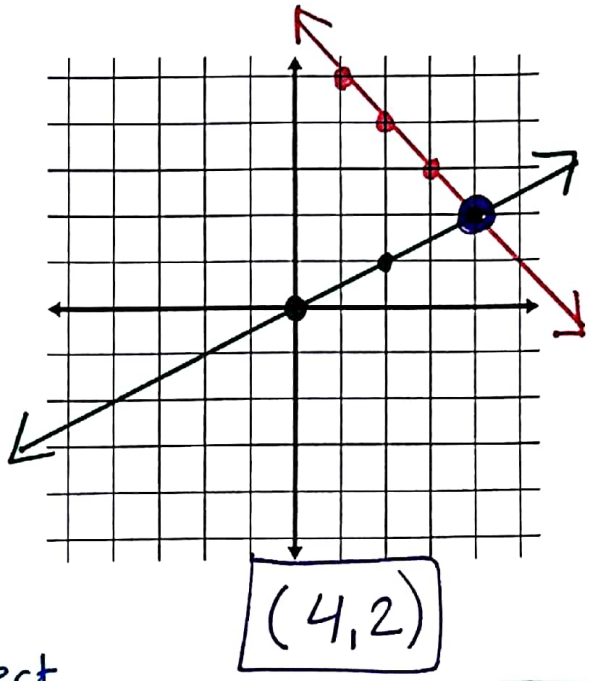
$y = 0 + \frac{1}{2}x$

$3x + 3y = 18$

$-3x \quad\quad -3x$

$\frac{3y}{3} = \frac{18 - 3x}{3}$

$y = 6 - 1x$



(4,2)

2ND TRACE 5: intersect

First curve? make sure Y1, press ENTER

Second curve? make sure Y2, press ENTER

Guess? get as close to intersection as possible, press ENTER

EX3. Solve the systems of equations by graphing:

$2x - 3y = -6$ ●

$x = -3$ ●

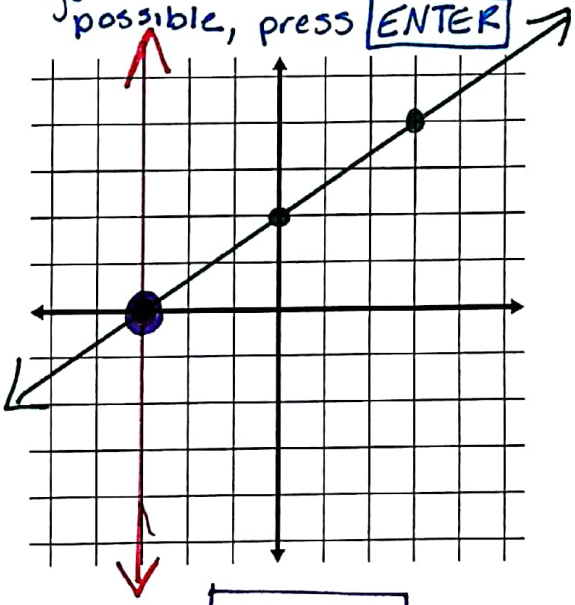
$2x - 3y = -6$

$-2x \quad\quad -2x$

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

$y = 2 + \frac{2}{3}x$

$x = -3$



(-3,0)