

7.1: Solving Systems through Graphing

“I WILL ...

Determine the solution set through linear equations.”

I. Definitions

A. Systems of Linear Equations

1. Requires 2 variables into two linear standard form equations

$$\begin{cases} Ax + By = C \\ Dx + Ey = F \end{cases}$$

B. Solutions are systems of ordered pairs (x, y)

II. Steps when plugging in points

- A. Identify the problem
- B. Plug in solution
- C. See if it is true or false, if any of the problem is false, the solution is false.

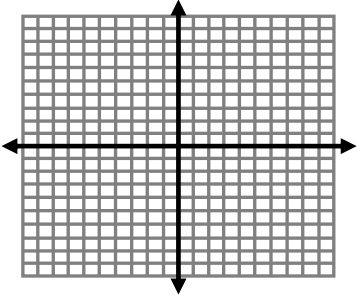
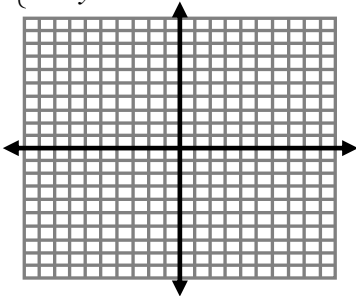
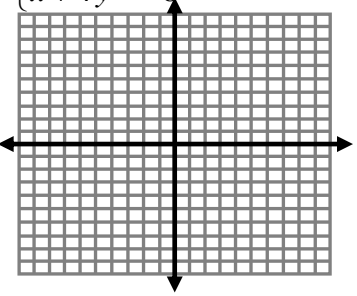
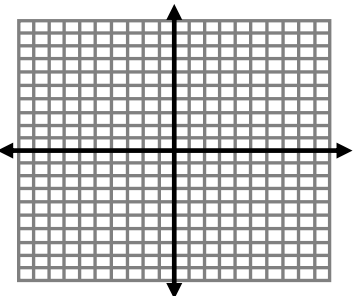
III. Steps when graphing

- A. Graph both equations (preferably on y -intersect form)
- B. Determine what the intersecting point is and put it in coordinate form
- C. Check your point to both equations

IV. Types of Solutions

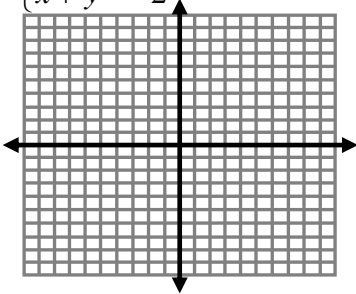
- A. Put the equations into slope-intercept form
- B. Determine the equation by looking the slope of the system
- C. Determine the solution
 1. _____ Solution: A system that has at least ONE solution
 2. _____ Solution: A system that has NO solution
 3. _____ Solution: A system that has EXACTLY one solution
 4. _____ Solution: A system that has INFINITE amount of solutions

V. Model Problems

<p>Ex 1: Is $(1, 3)$ a solution to the system, $\begin{cases} 5x - 3y = -4 \\ x + 2y = 7 \end{cases}$</p>	<p>Ex 2: Is $(1, -3)$ a solution to the system, $\begin{cases} 5x - 3y = -4 \\ x + 2y = 7 \end{cases}$</p>	<p>Your Turn: Is $(-1, 6)$ a solution to the system, $\begin{cases} -4x - y = -2 \\ 7x + 2y = -5 \end{cases}$</p>
<p>Ex 3: Graph these equations and determine the intersection points for this system, $\begin{cases} -x + 2y = 4 \\ -3x + 4y = 4 \end{cases}$</p> 	<p>Ex 4: Graph these equations and determine the intersection points for this system, $\begin{cases} x - 2y = 2 \\ x + y = 5 \end{cases}$</p> 	
<p>Your Turn: Graph these equations and determine the intersection points for this system, $\begin{cases} -x + y = -7 \\ x + 4y = -8 \end{cases}$</p> 	<p>Ex 5: Determine the intersection point and system as consistent, inconsistent, dependent, and/or independent of $\begin{cases} y = -x + 3 \\ y = x + 1 \end{cases}$</p> 	

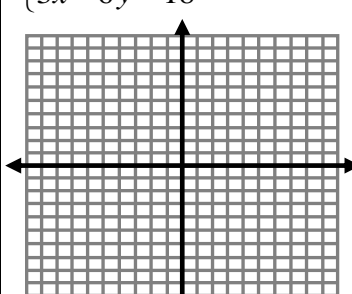
Ex 6: Determine the intersection point and system as consistent, inconsistent, dependent, and/or independent of

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



Ex 7: Determine the intersection point and system as consistent, inconsistent, dependent, and/or independent of

$$\begin{cases} x = 2y + 6 \\ 3x - 6y = 18 \end{cases}$$



Your Turn: Determine the intersection point and system as consistent, inconsistent, dependent, and/or independent of

$$\begin{cases} y = 2x - 4 \\ -6x + 3y = -12 \end{cases}$$

