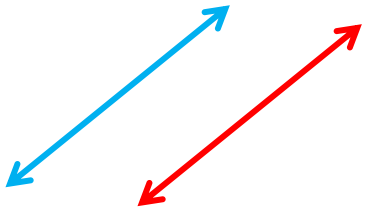
SYSTEMS of EQUATIONS HANDOUT

Solving a system of two linear equations means finding the point where the two lines intersect. This is why solutions to systems of two linear equations are written in the form

$$(x, y)$$

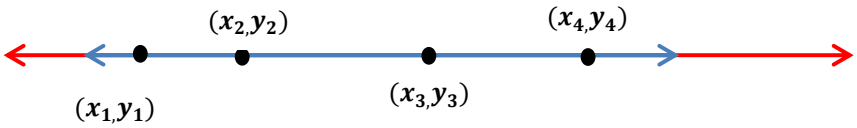
PARALLEL LINES:

If two lines are **parallel**, they will NEVER intersect. Therefore a system of equations involving two parallel lines is said to have **No Solution**, since they will never share a point.



SAME LINE:

If a system of equations involve two equations that represent the **same line**, then the two lines intersect at <u>every</u> point on the line. Therefore a system of equations involving two equations that represent the **same line** is said to have an **infinite number of solutions.**



Solving Systems by Graphing

Example 1:

$$x - y = 2$$
$$x + y = 6$$

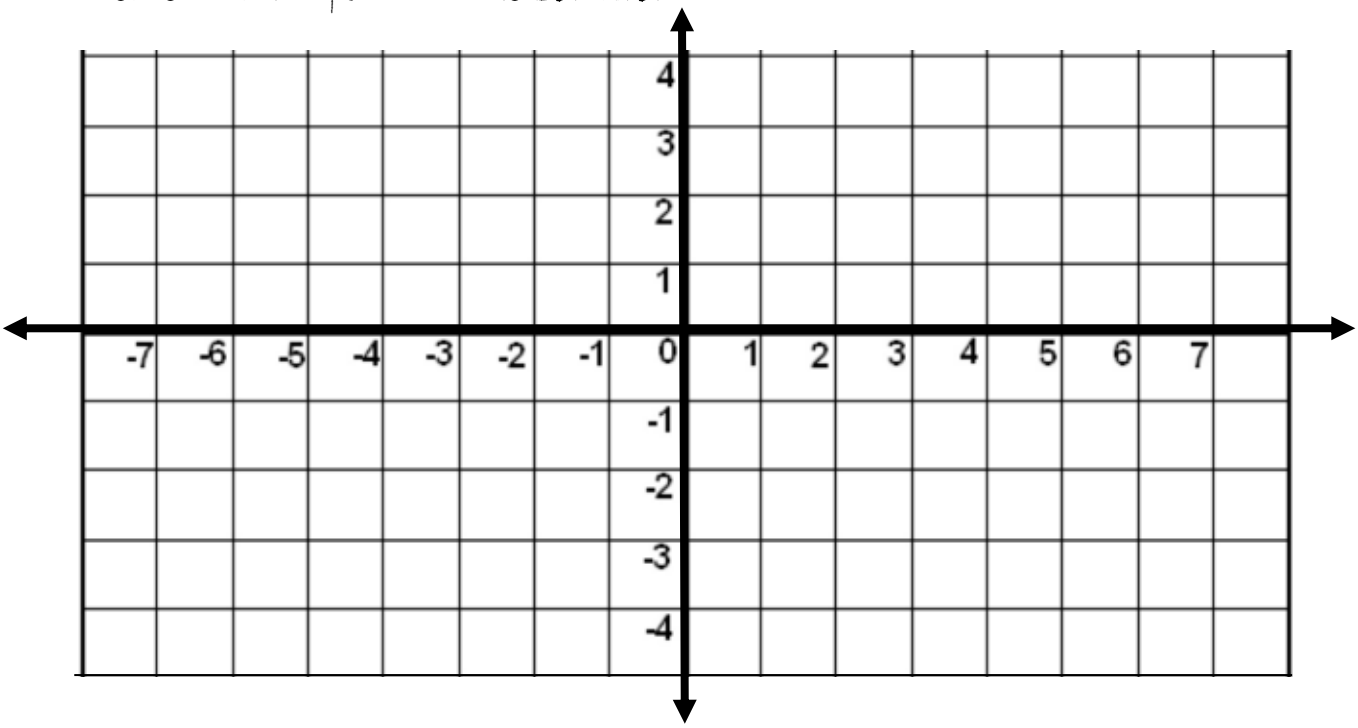
$x - y = 2$

x	y
2	0
3	1
4	2

$x + y = 6$

x	y
2	4
3	3
4	2

Graph both lines on the same grid and identify the point where they intersect. That point is the **solution**!



Solving Systems by Graphing — Practice Problems

Solve by Graphing:

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