

# Systems of Equations

## Today's Learning Targets:

- 6.1 - I can explain what it means for an ordered pair to be a solution of a system.
- 6.2 - I can use the graphs of two linear equations to estimate the solution of the system.
- 6.3 - I can explain graphically special systems of equations.

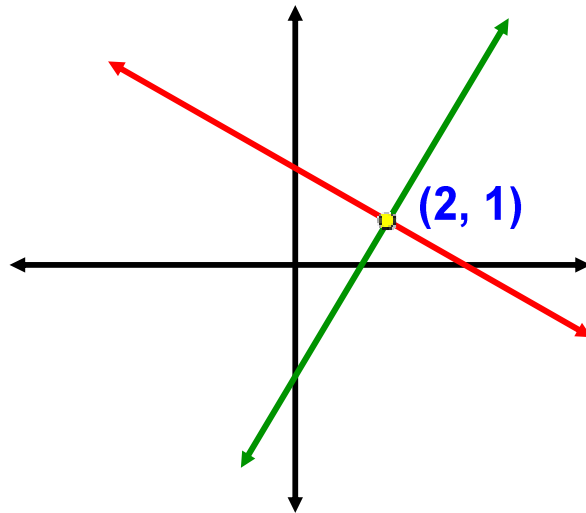
# System of Linear Equations:

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Unit 6 - 6.1, 6.2, & 6.3

A \_\_\_\_\_ to a system equations is an \_\_\_\_\_  $(x, y)$ .

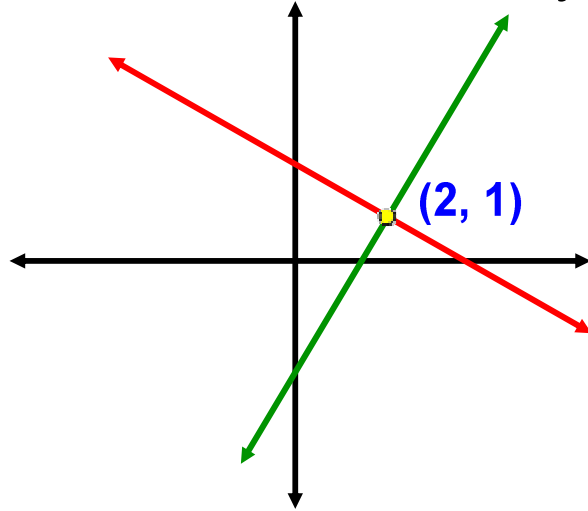
- An \_\_\_\_\_ of the two graphs
- Is \_\_\_\_\_ for (works in)



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

# To solve a system by graphing:

1. \_\_\_\_\_
2. \_\_\_\_\_ where they cross as an \_\_\_\_\_
3. Check the solution by \_\_\_\_\_.



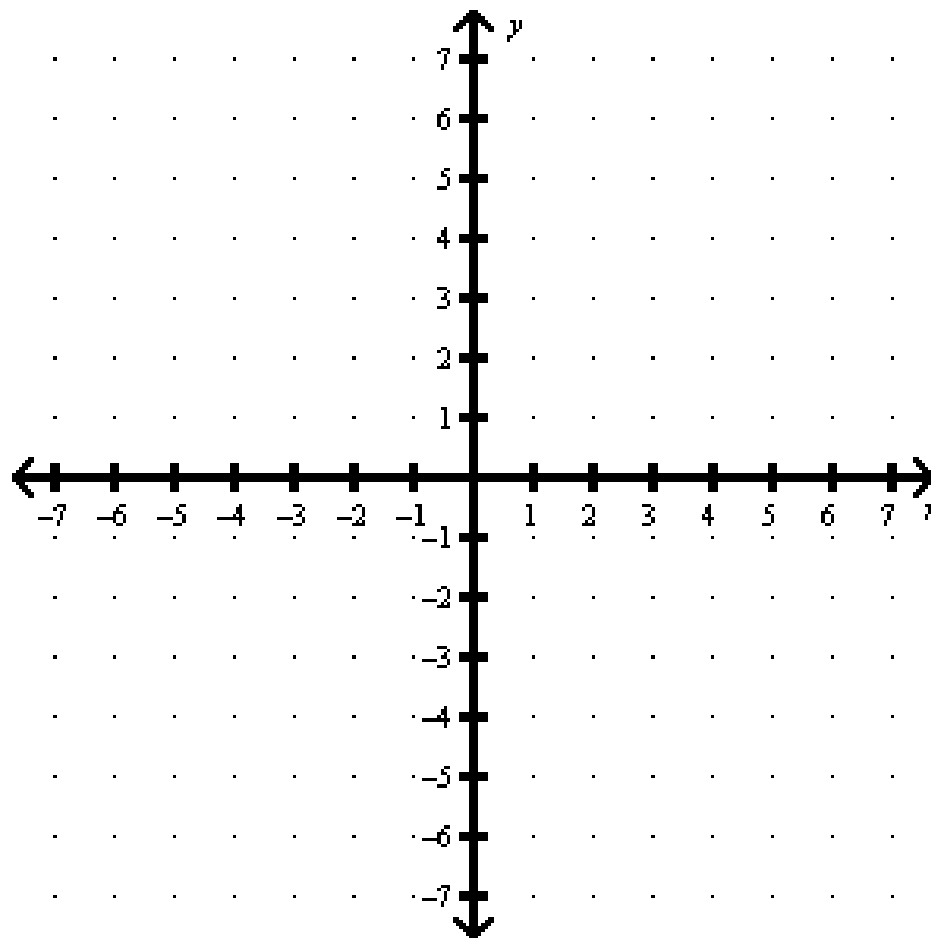
$$\begin{cases} x + 2y = 4 \\ y = \frac{3}{2}x - 2 \end{cases}$$

## Ways to graph:

$\begin{array}{c c} x & y \\ \hline -2 & \\ -1 & \\ 0 & \\ 1 & \\ 2 & \end{array}$	$y = mx + b$

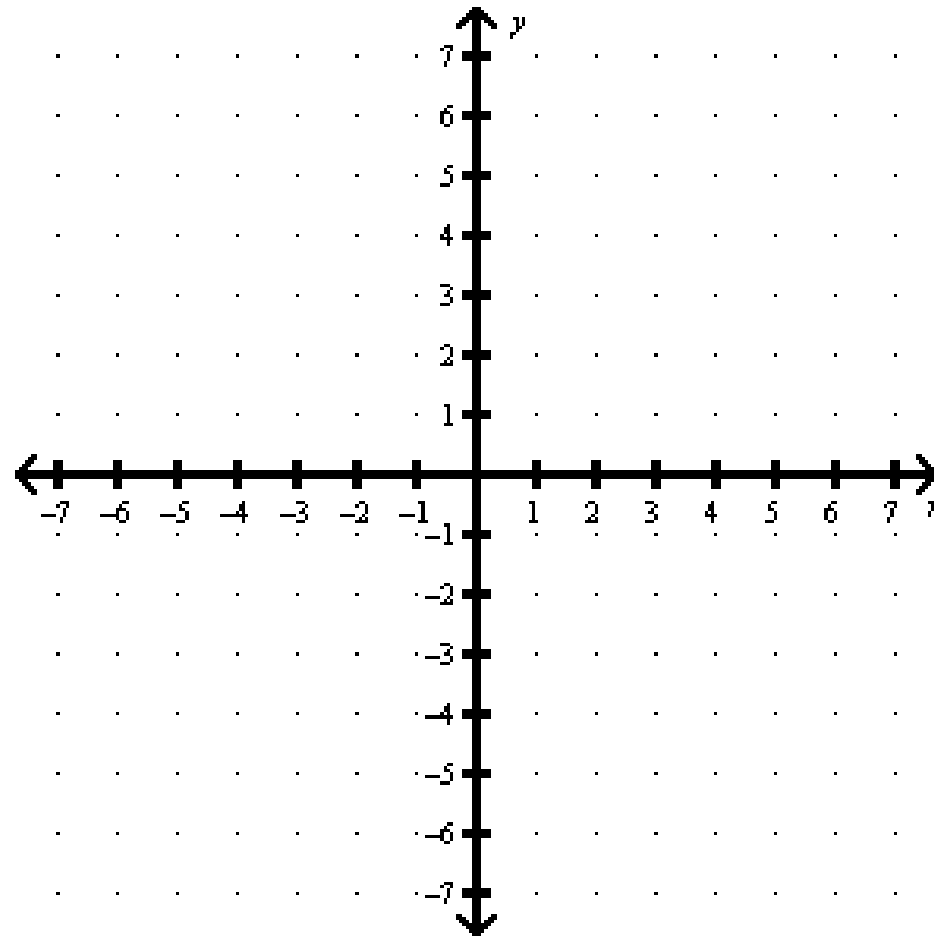
Solve the system by graphing.

$$\begin{cases} y = -x + 1 \\ y = 3x - 3 \end{cases}$$



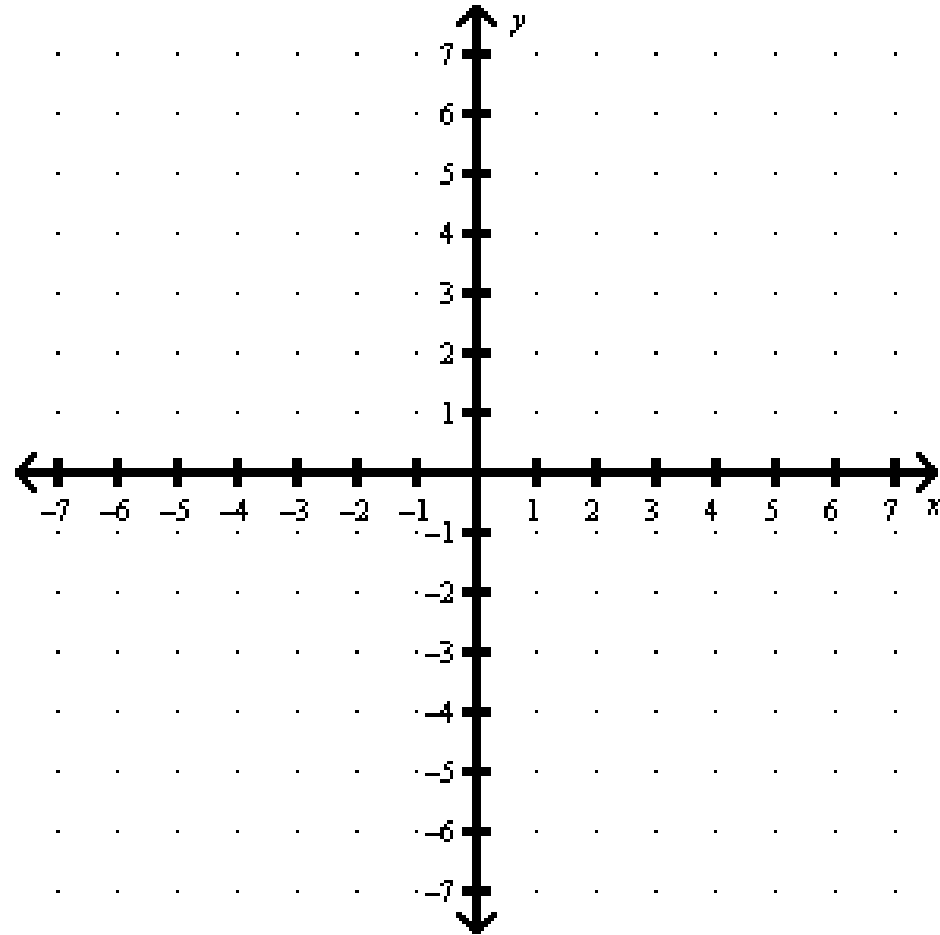
Solve the system by graphing.

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



Solve the system by graphing.

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





Is  $(2, 7)$  a solution to this system?

use algebra to check.

$$\begin{cases} y = 4x - 1 \\ y = 3x + 2 \end{cases}$$

Is  $(3, 11)$  a solution to this system?

use algebra to check.

$$\begin{cases} y = 4x - 1 \\ y = 3x + 2 \end{cases}$$

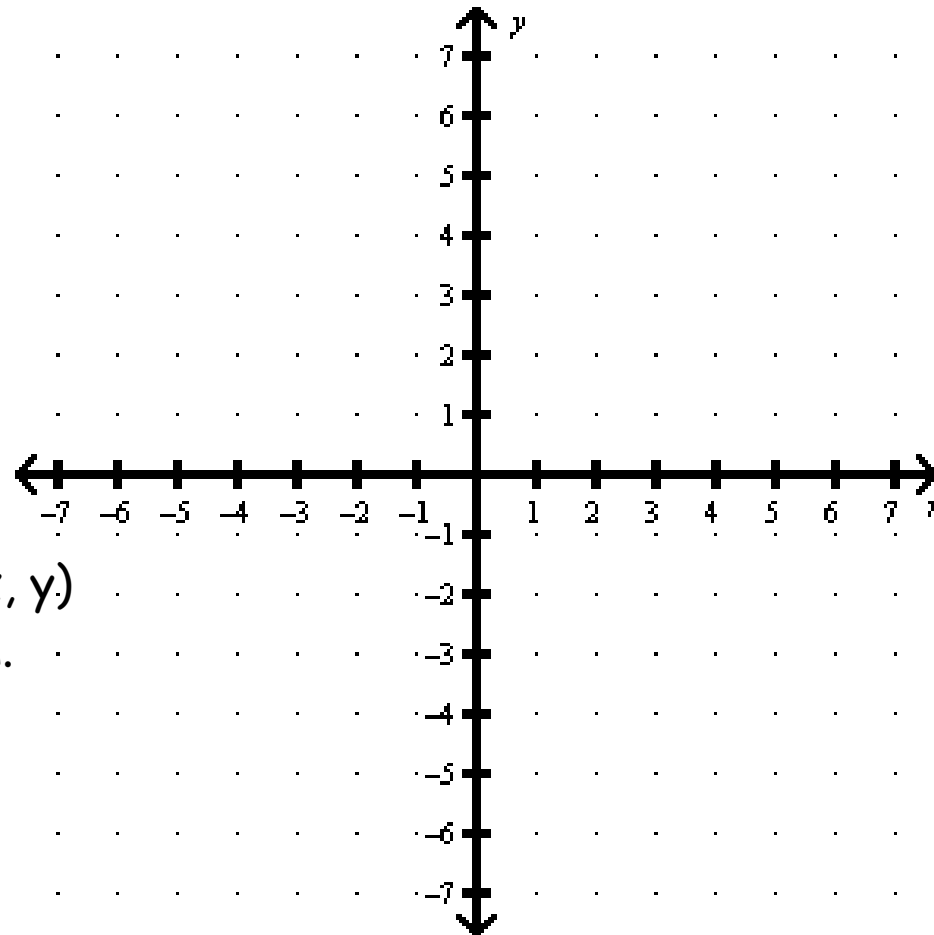
Solve the system by graphing\*.

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

$$y = \frac{1}{2}x - 3$$

The SOLUTION is the intersection point, the (x, y) pair they have in common.

What's the solution?



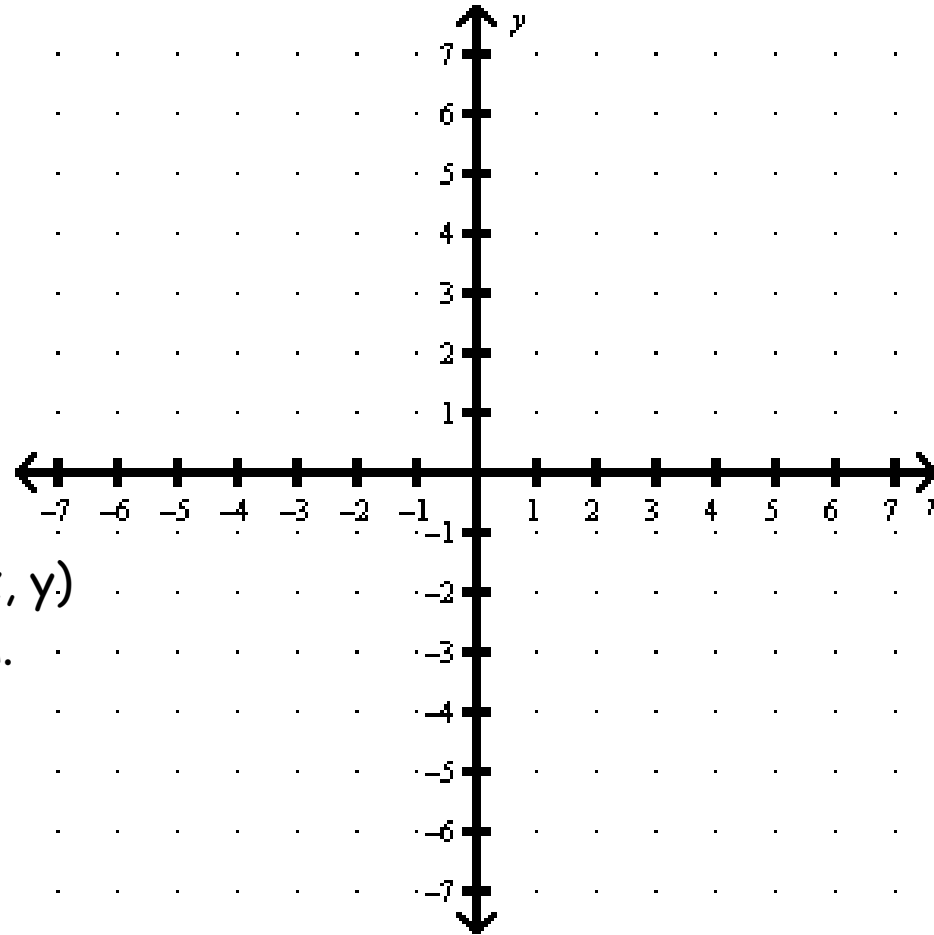
Solve the system by graphing\*.

$$y = -x + 2$$

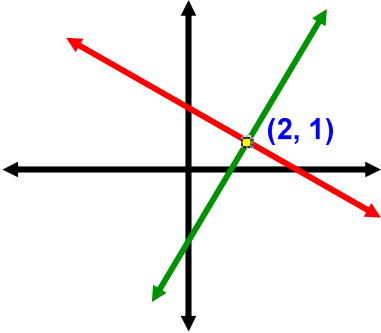
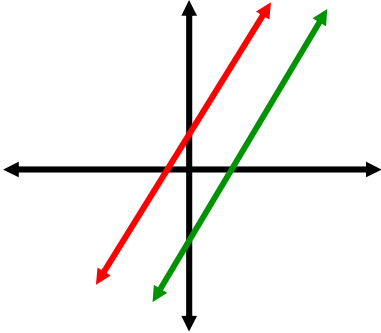
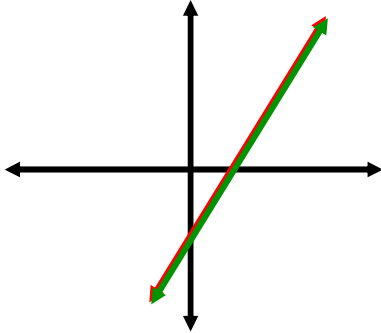
$$x + y = 2$$

The SOLUTION is the intersection point, the  $(x, y)$  pair they have in common.

What's the solution?



# 3 Possible Solutions of Linear Systems

 <p>A coordinate plane with x and y axes. A red line with a negative slope and a green line with a positive slope intersect at a point marked with a small circle and labeled <math>(2, 1)</math>.</p>	 <p>A coordinate plane with x and y axes. A red line and a green line are parallel, both with positive slopes. They do not intersect.</p>	 <p>A coordinate plane with x and y axes. A red line and a green line overlap perfectly, representing the same line. They have a positive slope.</p>