

SOLVING SYSTEMS BY GRAPHING

1. Graph **both equations** on the **same graph** using slope-intercept form.
2. The intersection of the lines is the **solution** of the system.
→ A solution of the system makes both of the equations true!
3. If the lines are **parallel**, there is no solution.
4. If the equations create the **same line**, there are infinitely many solutions.

Example:

$$x + y = -1$$

$$y = -x - 1$$

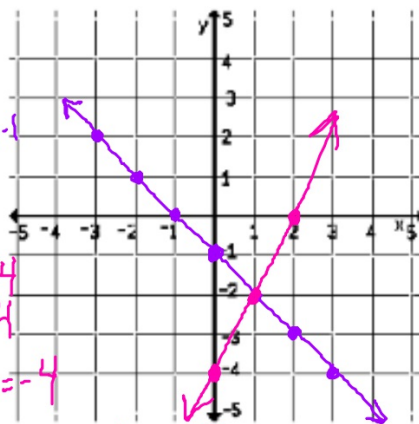
$$m = -1, b = -1$$

$$2x - y = 4$$

$$-y = -2x + 4$$

$$y = 2x - 4$$

$$m = 2, b = -4$$



SOLUTION: (1 , -2)

Graph this system of linear equations, then estimate what the solution is:

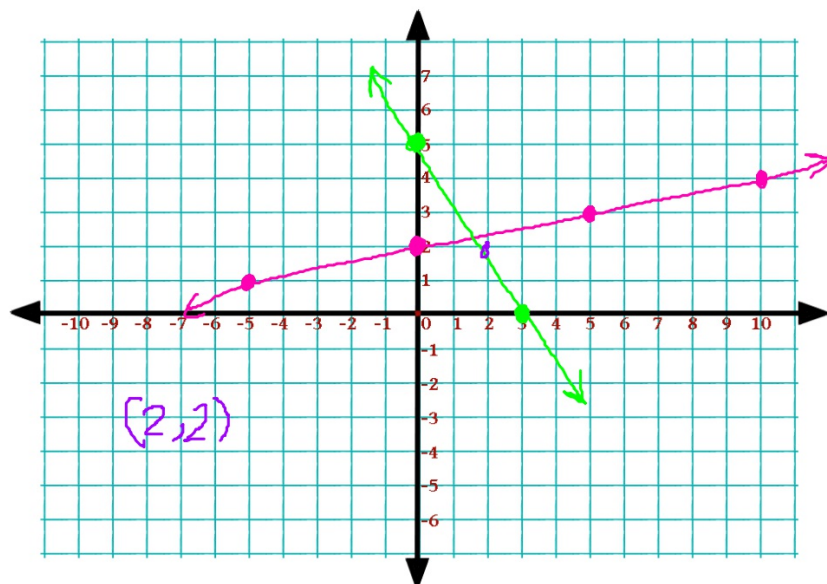
Ex. 1)

- $y = \frac{1}{5}x + 2$

$m = \frac{1}{5}, b = 2$

- $y = -\frac{5}{3}x + 5$

$m = -\frac{5}{3}, b = 5$



Graph this system of linear equations, then estimate what the solution is:

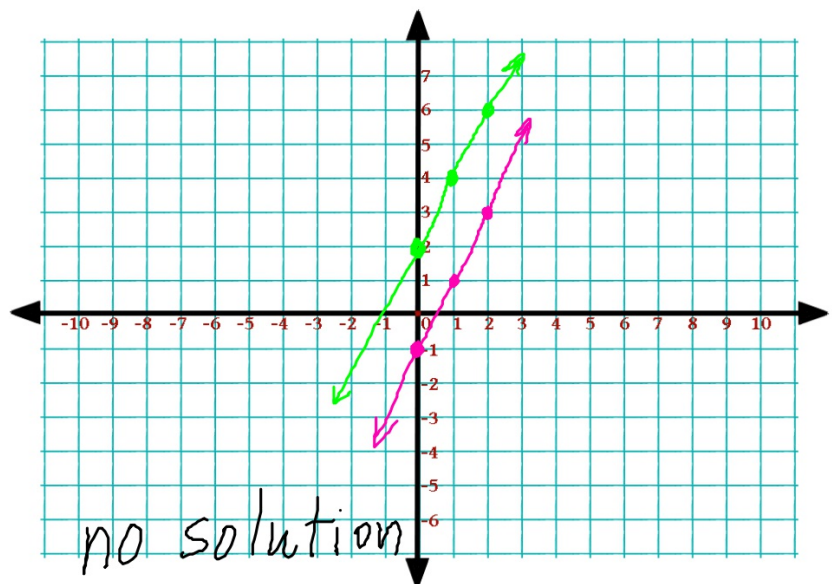
Ex. 2)

$$y = 2x - 1$$

$$m = \frac{2}{1}, b = -1$$

$$y = 2x + 2$$

$$m = \frac{2}{1}, b = 2$$



no solution

Graph this system of linear equations, then estimate what the solution is:

Ex.3)

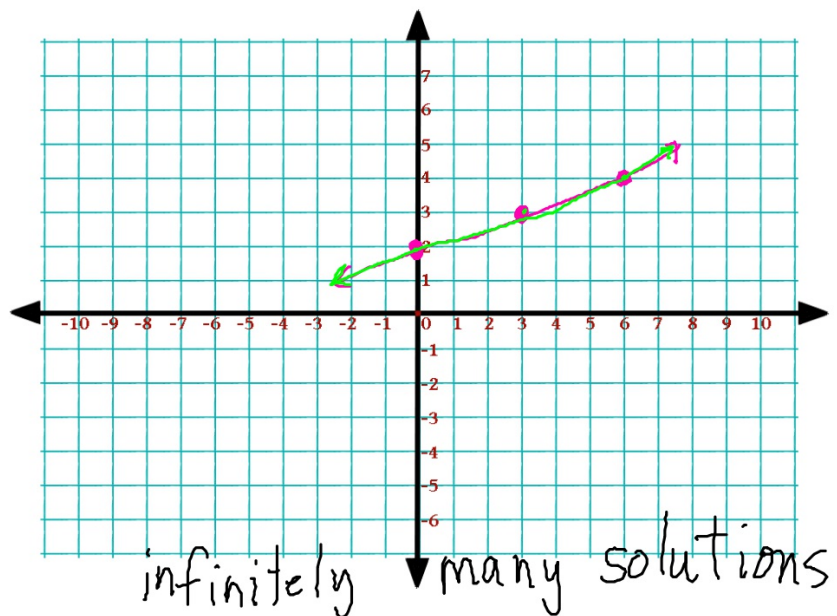
$$y = \frac{1}{3}x + 2$$
$$m = \frac{1}{3}, b = 2$$

$$-x + 3y = 6$$

$$3y = x + 6$$

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

$$m = \frac{1}{3}, b = 2$$



<https://m.youtube.com/watch?v=75m60SxFJg>

Graph this system of linear equations, then estimate what the solution is:

Ex. 4)

$$y = -\frac{2}{3}x + 4$$
$$m = -\frac{2}{3}, b = 4$$

$$-x + y = -4$$

$$y = x - 4$$

$$m = 1, b = -4$$

