

Find the slope and y-intercept.

$$2x + 3y = 12$$

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

$$\frac{3y}{3} = \frac{-2x+12}{3}$$

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

$$m = -\frac{2}{3} \quad b = 4$$

$$x - 4y = -3$$

$$-x \quad -x$$

$$\frac{-4y}{-4} = \frac{-x-3}{-4}$$

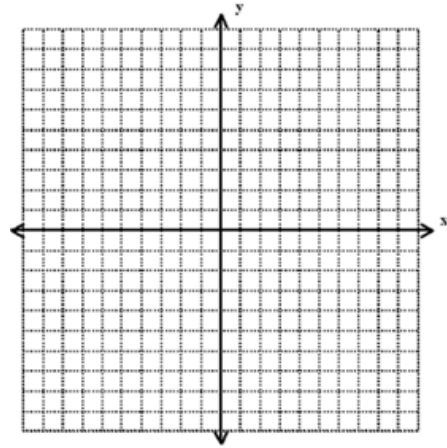
$$y = \frac{1}{4}x + \frac{3}{4}$$

$$m = \frac{1}{4} \quad b = \frac{3}{4}$$

Are You The Solution??

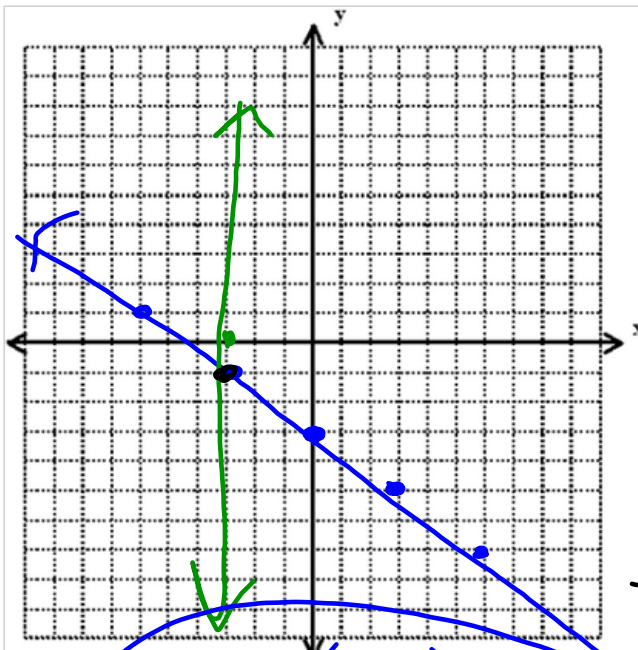


Homework Questions?



Finish Yesterday's Notes

5)



\therefore Yes, $(-3, -1)$ is sol.

$$5) y = -\frac{2}{3}x - 3$$

$$m = -\frac{2}{3} \quad b = -3$$

$$x = -3$$

undefined

$$\begin{pmatrix} -3 \\ -1 \end{pmatrix}$$

$$x = -3$$

$$-3 = -3 \checkmark$$

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

$$-1 = -\frac{2}{3}(-3) - 3$$

$$-1 = -1 \checkmark$$

7.1 Graphing Linear Systems Continued

Goals: • Estimate the solution of a system of linear equations by graphing.

EQ: What are the steps to solve systems by graphing?

Example 2: Graph and Check a Linear System
 Use the graph-and-check method to solve the linear system.

Equation 1
 $5x + 4y = -12$

Equation 2
 $3x - 4y = -20$

Handwritten work for Equation 1:
 $5x + 4y = -12$
 $-5x \quad -5x$
 $-4y = -3x - 12$
 $\frac{-4y}{-4} = \frac{-3x - 12}{-4}$
 $y = \frac{3}{4}x + 3$
 $m = \frac{3}{4} \quad b = 3$

Handwritten work for Equation 2:
 $3x - 4y = -20$
 $-3x \quad -3x$
 $-4y = -3x - 20$
 $\frac{-4y}{-4} = \frac{-3x - 20}{-4}$
 $y = \frac{3}{4}x + 5$
 $m = \frac{3}{4} \quad b = 5$

Graph showing two lines on a coordinate plane. The lines intersect at the point $(-4, 2)$. The grid shows x and y axes with labels at 4 and 2. The lines are labeled with their equations: $y = \frac{3}{4}x + 3$ (green) and $y = \frac{3}{4}x + 5$ (blue). The intersection point is marked with a black dot.

Handwritten check for Equation 1:
 $5x + 4y = -12$
 $5(-4) + 4(2) = -12$
 $-20 + 8 = -12$
 $-12 = -12 \checkmark$

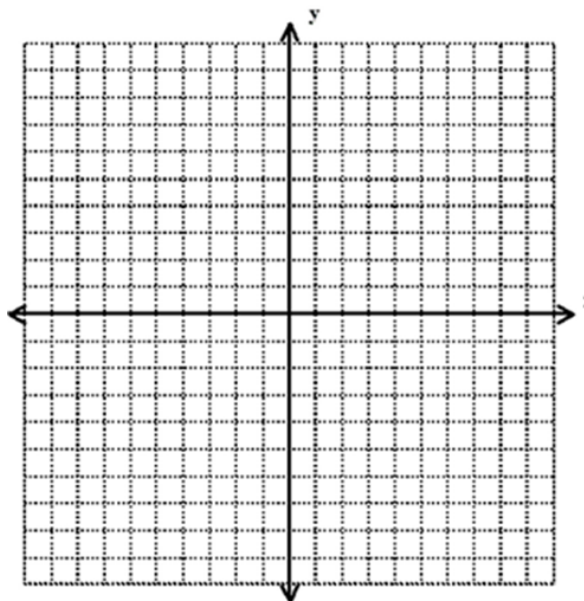
Handwritten check for Equation 2:
 $3x - 4y = -20$
 $3(-4) - 4(2) = -20$
 $-12 - 8 = -20$
 $-20 = -20 \checkmark$

∴ Yes, $(-4, 2)$ is soln.

Try It Use the graph-and check method to solve the linear system.

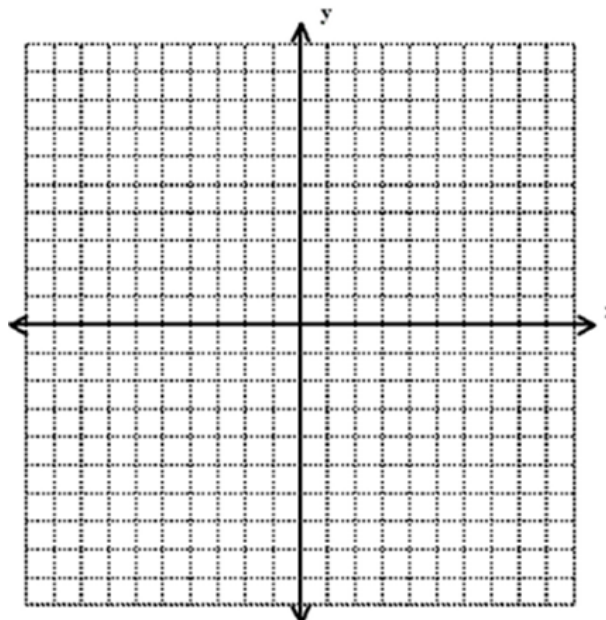
1) $3x - 4y = 4$

$x + 2y = 8$



2) $5x + 2y = 4$

$9x + 2y = 12$



3) $y = -2x - 3$ $m = -2$
 $2x + 5y = 25$ $b = -3$

$-2x$ $-2x$
 $\frac{5y}{5} = \frac{-2x + 25}{5}$

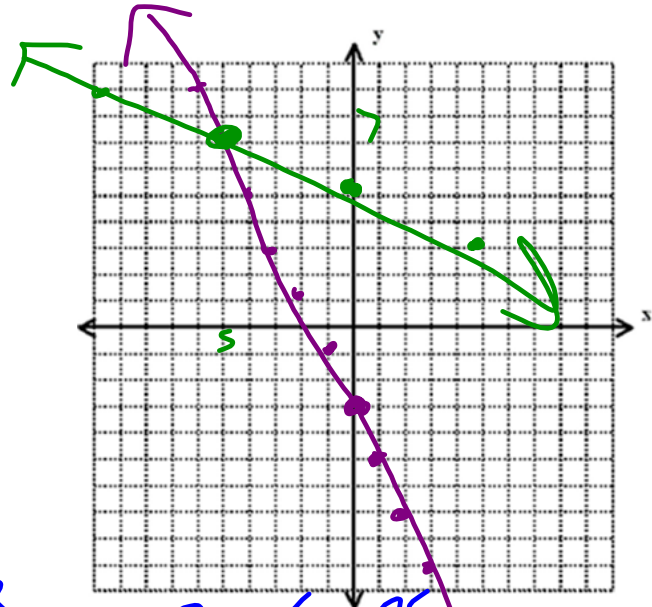
$y = -\frac{2}{5}x + 5$

$m = -\frac{2}{5}$ $b = 5$

$(-5, 7)$

y of $(-5, 7)$ is $5 \times 2 = 10$

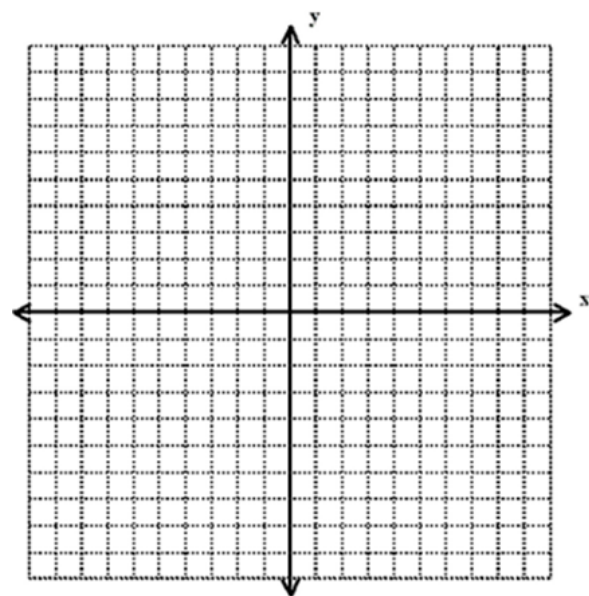
$y = -2x - 3$
 $7 = -2(-5) - 3$
 $7 = 7 \checkmark$



$2x + 5y = 25$
 $2(-5) + 5(7) = 25$
 $25 = 25 \checkmark$

4) $y = 3x + 4$

$7x - 3y = -6$



Summary

EQ: What are the steps to solve systems by graphing?

7.1 HW Day 2

7.1 Solving Systems of Equations by Graphing #1-19odd