

Warm-Up: Solve the Equations (Look back in notes if needed)

1.

$$12 + 2x - x = 9x + 6$$

$$\begin{aligned} 12 + 2x - x &= 9x + 6 \\ 12 + x &= 9x + 6 \\ -x & \quad -x \\ 12 &= 8x + 6 \\ -6 & \quad -6 \\ \frac{6}{8} &= \frac{8x}{8} \\ x &= 0.75 \end{aligned}$$

2.

$$4(2x + 1) = 5x + 3x + 9$$

$$\begin{aligned} 4(2x + 1) &= 5x + 3x + 9 \\ 8x + 4 &= 8x + 9 \\ -8x & \quad -8x \\ 4 &= 9 \\ \text{False} \\ \text{No Solution} \end{aligned}$$

3.

$$5(x + 2) - 3x = 2(x + 5)$$

$$\begin{aligned} 5(x + 2) - 3x &= 2(x + 5) \\ 5x + 10 - 3x &= 2x + 10 \\ 2x + 10 &= 2x + 10 \\ -2x & \quad -2x \\ 10 &= 10 \\ \text{True} \\ \text{Infinite Solutions} \end{aligned}$$

HW)

$$\begin{aligned} 3x + 2y &> -2 \\ -3x & \quad -3x \end{aligned}$$

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

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

$$\begin{aligned} x + 2y &> 2 \\ -x & \quad -x \end{aligned}$$

$$\frac{2 \cdot y}{2} > \frac{-1x + 2}{2}$$

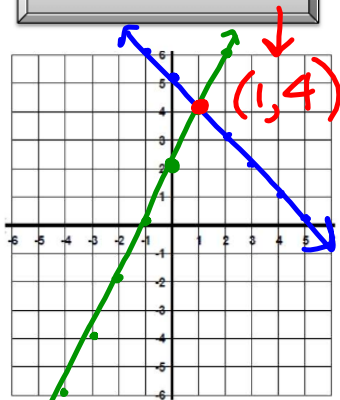
$$y > \frac{1}{2}x + 1$$

$y = mx + b$

### SOLUTIONS TO SYSTEMS OF EQUATIONS

Graph each system. Then solve each one mathematically. In the box above each graph, identify how many solutions each system has.

ONE SOLUTION

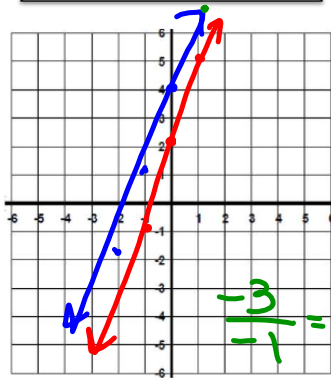


$$y = 2x + 2$$

$$y = -x + 5$$

down 1, right 1

No Solution

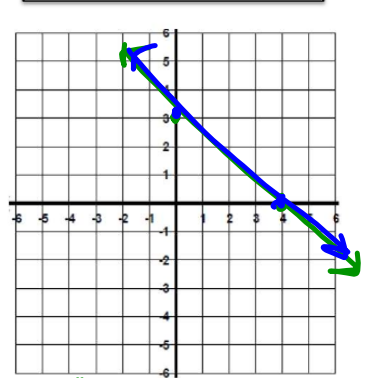


$$y = 3x + 4$$

$$2y = 6x + 4$$

$$y = 3x + 2$$

Infinite Solutions



$$x = 4 \quad y = 3$$

$$3x + 4y = 12$$

$$15x + 20y = 60$$

$$x = 4 \quad y = 3$$