

$$4. \quad -3 \leq \frac{2}{3}r + 9$$

$\begin{array}{ccc} -9 & & -9 \end{array}$

$$\frac{3}{2} \rightarrow \frac{-12}{2} \leq \frac{2}{3}r$$

$\begin{array}{ccc} \frac{3}{2} \rightarrow 1 & & \frac{2}{3}r \end{array}$

$$\frac{-36}{2} \leq r$$

$$-18 \leq r$$

$$r \geq -18$$



⑧

$$-3x + 4 < 5x + 8$$

$\begin{array}{ccc} +3x & & +3x \end{array}$

$$4 < 8x + 8$$

$\begin{array}{ccc} -8 & & -8 \end{array}$

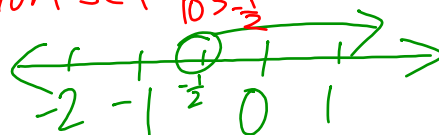
$$\frac{-4}{8} < \frac{8x}{8}$$

$$\frac{-2}{4} < x$$

$$\frac{-1}{2} < x \quad x > -\frac{1}{2}$$

$$\frac{3x+2}{1-x}$$

Solution set




HW 2-1

$\underbrace{3, 4, 5, 6, 7, 8, 9, 10, 11}_{3-11}, \underbrace{20, 21, 22}_{20-22}$

3-11                      20-22

2 pts each  
2 work



## 2-2: Systems of Equations ==

Objectives: I can identify how many solutions a system has by looking at a graph

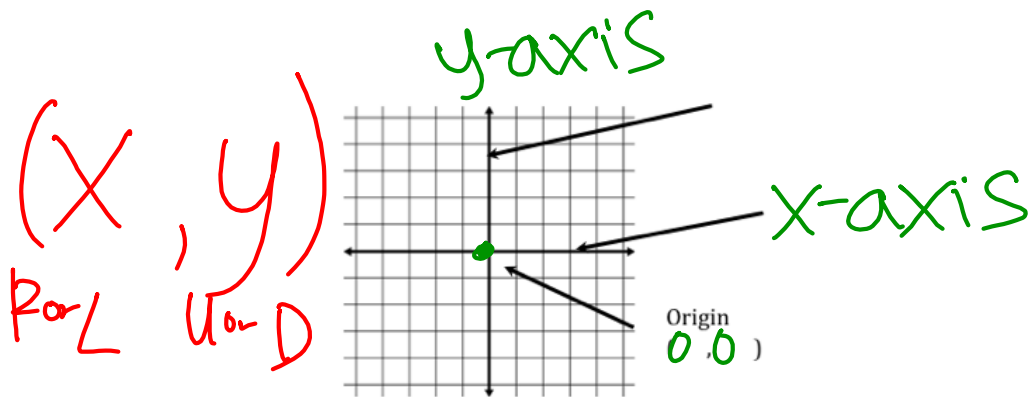
I can use a graph calculator to graph equations

I can verify a solution to a system algebraically and graphically

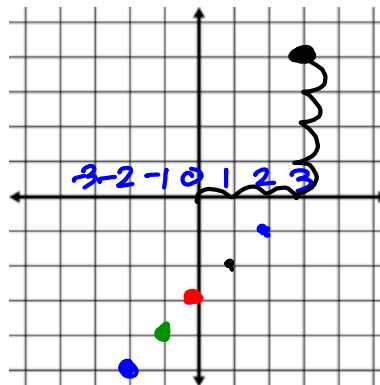
Vocab: System of equations, ordered pair, no solution, infinitely many solutions

$$\begin{cases} y = 3x + 2 \\ y = -x - 5 \end{cases}$$

## Ordered Pair Review



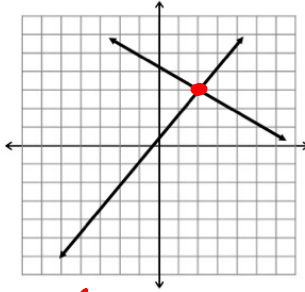
Plot the points  $(-2, -5)$ ,  $(-1, -4)$ ,  $(0, -3)$ ,  $(1, -2)$ ,  $(2, -1)$



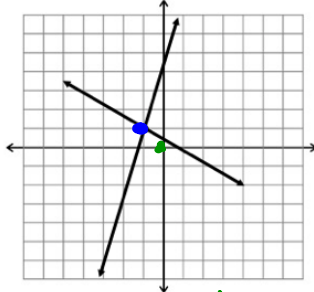
$(3, 4)$

Identify the ordered pair where the two lines intersect

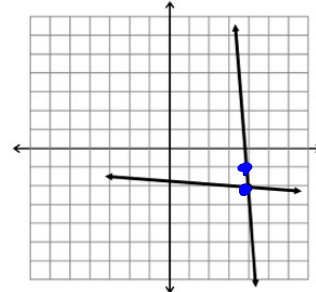
$(x, y)$



$(2, 3)$



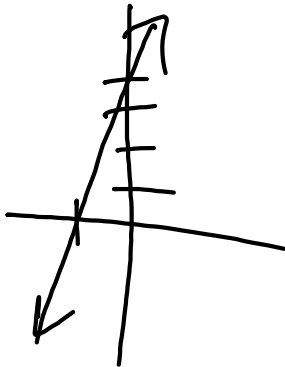
$(-1, 1)$



$(4, -2)$

Calculator Activity: For the following examples, graph in your calculator then draw a sketch

$y = 3x + 4$



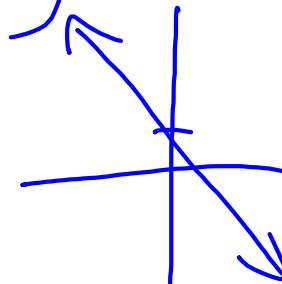
$y = \frac{2}{3}x + 1$



$y =$   
 $y + x = 1$   
 $-x \quad -x$

$y = 1 - x$

$y = -x + 1$



Graph the **system of equations** in the graphing calculator and draw a sketch. Then find the **solution** (intersection)

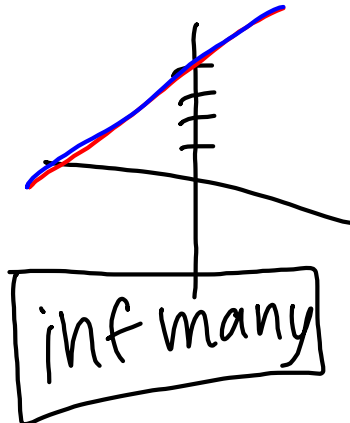
$$y_1 = 3x + 1$$

$$y_2 = 2x$$



$$y = \frac{1}{2}x + 4$$

$$y = \frac{1}{2}x + 4$$

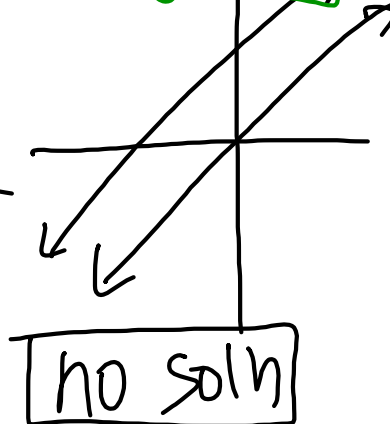


$$y = x + 6$$

$$y - 6 = -x$$

$$y + x = -2$$

$$y = -x - 2$$



Find the solution to each system by graphing:

$$y = x$$

intersection

$$y = -2x + 4$$

$$y = -2x + 3$$

$$y = 4x + 1$$

$$(1, 1)$$

$$(5, 3)$$

## Verifying Solutions: Graphically

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

$$y = -x + 1$$

(3, -2)

yes

Find  
Solution

$$y = -1$$

$$y = -\frac{5}{2}x + 4$$

(2, -1)

$$y = 3x - 4$$

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

(0, -4)

no

(2, 2)

## Verifying Solutions: Algebraically

$$y = 4x + 3 \rightarrow -1 = 4(-1) + 3$$

$$y = -x - 2 \rightarrow -1 = -4 + 3$$

(-1, -1)

x y

$$-1 = -1 \checkmark$$

yes

$$\rightarrow -1 = -1 - 2$$

$$-1 = -1 \checkmark$$

## Verifying Solutions: Algebraically

$$y = -2x + 2 \rightarrow 2 = -2(0) + 2$$

$$y = -2x - 2 \rightarrow 2 = 0 + 2$$

$$(0, 2)$$

NO

$$2 = 2 \checkmark$$

$$\rightarrow 2 = -2(0) - 2$$

$$2 = 0 - 2$$

$$2 = -2 \text{ ?}$$

## Verifying Solutions: Algebraically

$$y = x$$

$$y = -x$$

$$(2, 2)$$

9, 10, 11

HW calculator