

Today's Plan:

Learning Target (standard): I will solve a linear system using the graphing method. I will describe the type of system and its solution.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

NAME _____ #55

BELL RINGER 0:00:00

1.) Solve the system by graphing $2x - 3y = 8$
(intercept method) $-4x + 6y = -16$

2.) Write the verbal phrase as an expression, equation, or inequality.
6 less than 2 times k is greater than or equal to -11
 $2k - 6 \geq -11$

3.) Solve $-5x = 25$ using mental math.
 $x = -5$

① $2x - 3y = 8$
 ② $-4x + 6y = -16$

① I_x: (4, 0) $2x - 3(0) = 8$
 $2x = 8$
 $x = 4$
 I_y: (0, $-\frac{8}{3}$) $2(0) - 3y = 8$
 $-3y = 8$
 $y = -\frac{8}{3}$

② I_x: (4, 0)
 I_y: (0, $-\frac{8}{3}$)

$-4x + 6(0) = -16$ $-4(0) + 6y = -16$
 $-4x = -16$ $6y = -16$
 $x = 4$ $y = -\frac{8}{3}$

Graph using the **slope-intercept** method.

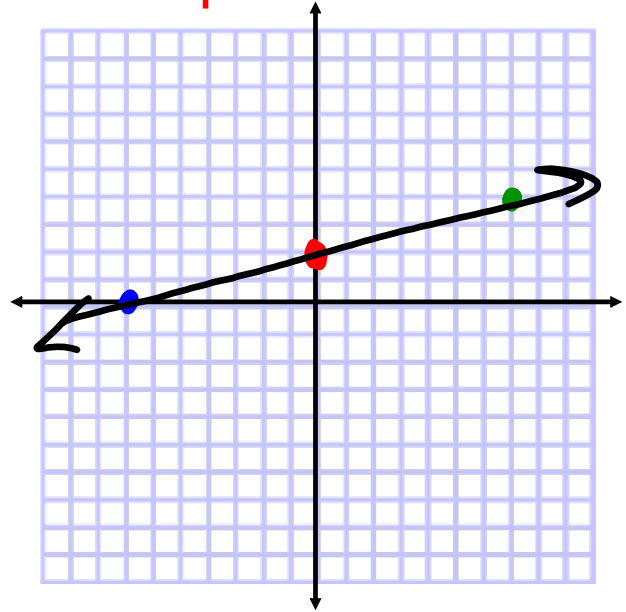
$$\begin{array}{r} -2x + 7y = 14 \\ +2x \quad \quad +2x \end{array}$$

$$\frac{7y}{7} = \frac{2x}{7} + \frac{14}{7}$$

$$y = \frac{2}{7}x + 2$$

$$m = \frac{2}{7}$$

$$I_y: (0, 2)$$



Graph using the **slope-intercept** method.

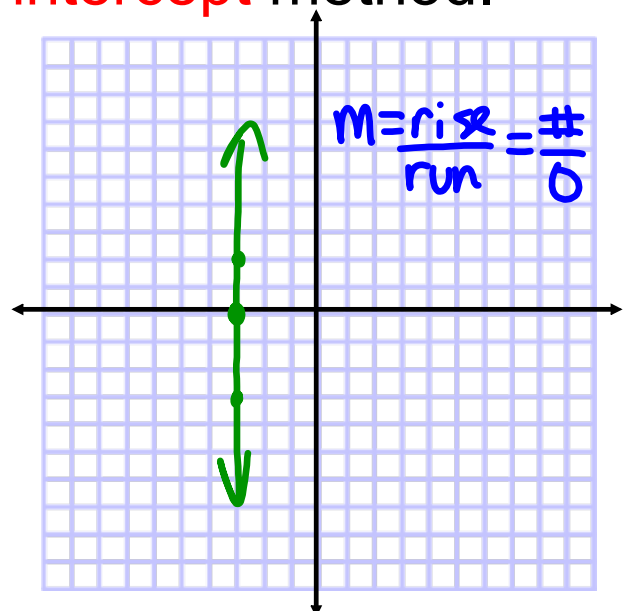
$$3x + 5 = -4$$

$$3x = -9$$

$$x = -3$$

$$m = \text{und}$$

$$I_x: (-3, 0)$$



Graph using the **slope-intercept** method.

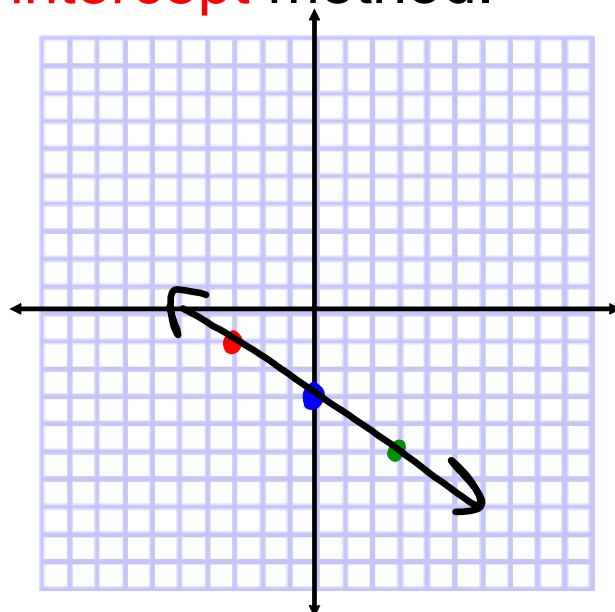
$$\begin{array}{r} 2x + 3y = -9 \\ -2x \qquad -2x \end{array}$$

$$\frac{3y}{3} = \frac{-2x - 9}{3}$$

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

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

$$I_y: (0, -3)$$



Graph using the **any** method.

$$\begin{array}{r} -5x - 4y = -12 \\ +5x \qquad +5x \end{array}$$

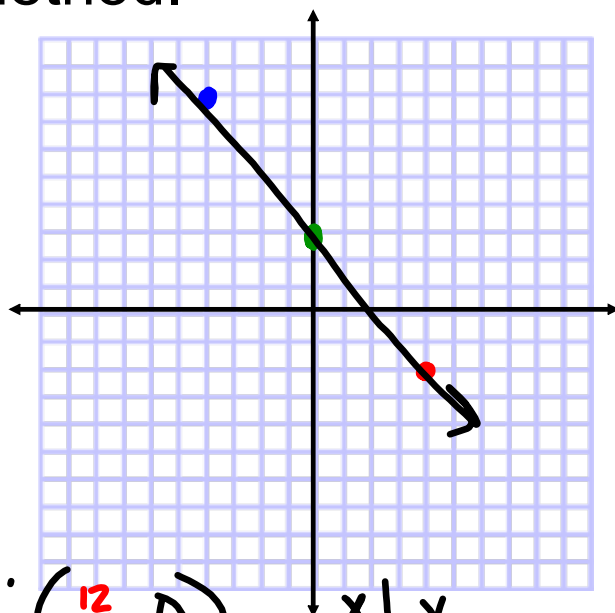
$$\frac{-4y}{-4} = \frac{5x - 12}{-4}$$

$$y = -\frac{5}{4}x + 3$$

$$m = -\frac{5}{4}$$

$$I_y: (0, 3)$$

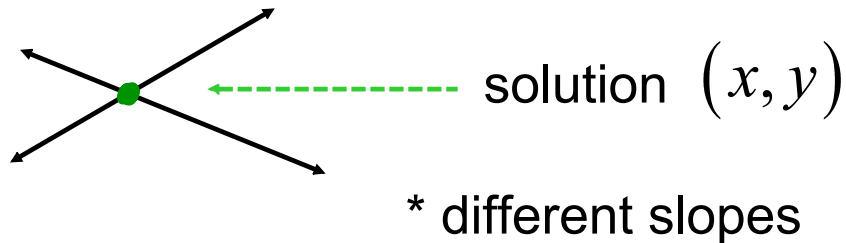
$$I_x: (\frac{12}{5}, 0)$$



x	y
-4	8
0	3
4	-1

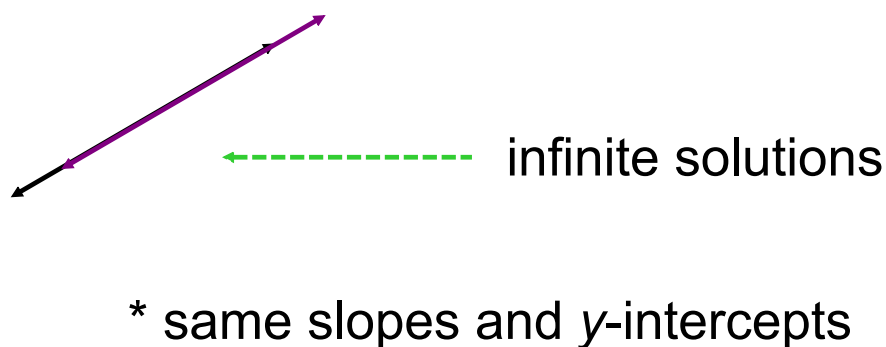
Systems of Linear Equations:

- A **system** of linear equations is a set of two or more linear equations that can have one of three types of solutions
- **Independent System** - the lines intersect at one point



Systems of Linear Equations:

- **Dependent System** - the lines are actually the same



Systems of Linear Equations:

- **Inconsistent System** - the lines are parallel



* same slope with different y-intercepts

The Graphing Method:

- In order to **solve** the system,
 - Put equations into **slope-intercept form**
 - Label the slopes and the y-intercepts and determine the type of system
 - Label the type of system
 - Graph each equation
 - Label the solution

Independent (x,y)

Dependent - infinite solutions

Inconsistent - no solution

Solve the system using the graphing method.

$$\textcircled{1} y - 2x = -5 \quad y = 2x - 5$$

$$\textcircled{2} y - x = -3 \quad m = 2$$

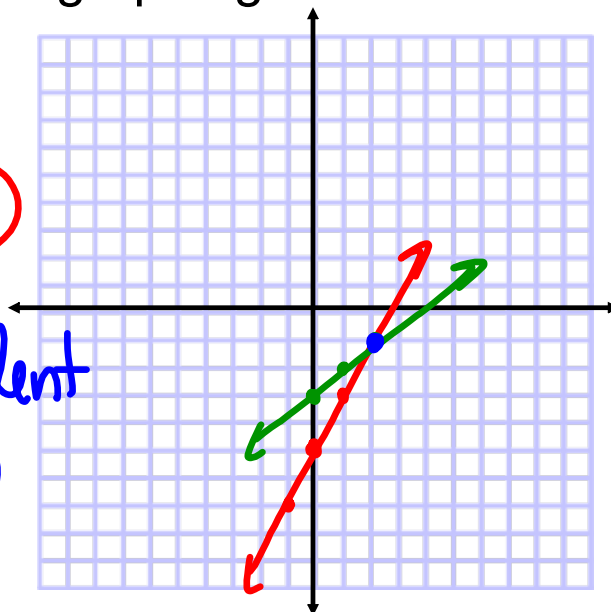
$$y = x - 3$$

$$m = 1$$

$$Iy: (0, -3)$$

$$Iy: (0, -5)$$

independent
(2, -1)



Solve the system using the graphing method.

$$\textcircled{1} 6x + 4y = 2 \quad \frac{4y}{4} = \frac{-6x + 2}{4}$$

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

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

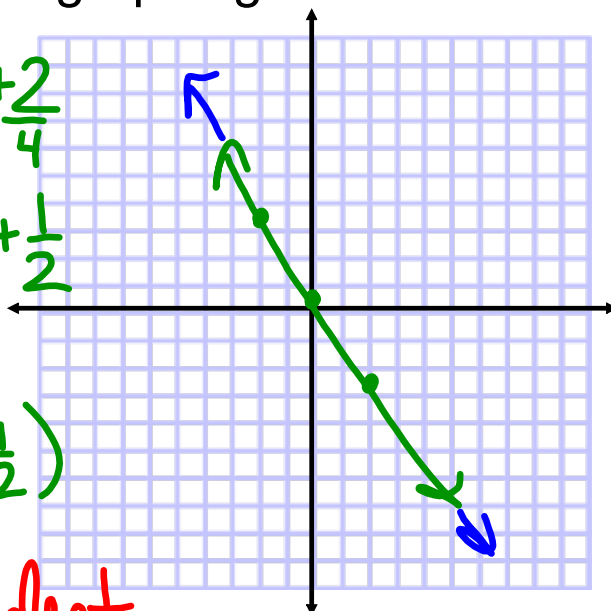
$$y = -\frac{3}{2}x + \frac{1}{2}$$

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

$$Iy: (0, \frac{1}{2})$$

$$Iy: (0, \frac{1}{2})$$

dependent
infinite solutions



Solve the system using the graphing method.

$$\textcircled{1} 2x + 3y = 6$$

$$\textcircled{2} 2x - y = -2$$

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

$$y = 2x + 2$$

$$m = 2$$

$$I_y: (0, 2)$$

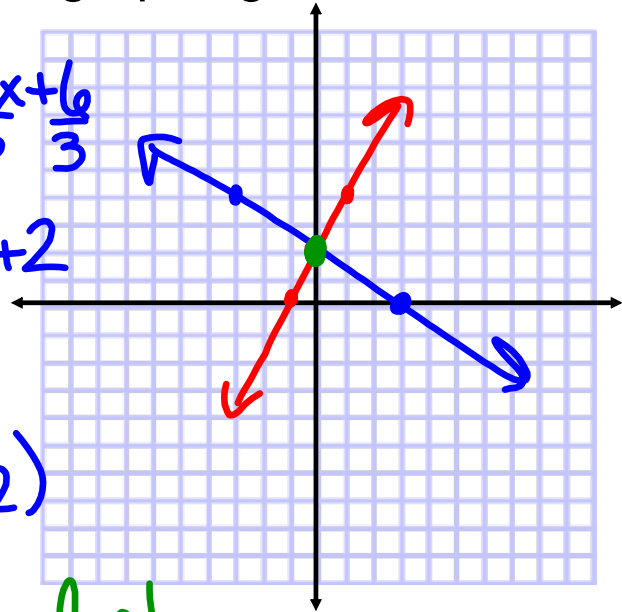
$$\frac{3y}{3} = \frac{-2x + 6}{3}$$

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

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

$$I_y: (0, 2)$$

independent
(0, 2)



Assignment:

Graphing Method

#1-6

- Find slope and I_y of each
- Determine type of system
- Graph each line
- Label solution