

Today's Plan:

Learning Target (standard): I will write the equation for a line in point-slope form. I will use the information to graph the line.

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 _____

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0:00:00

BELL RINGER

1.) Simplify the expression $8(x - 2) + 3 + 5x$.

$8x - 16 + 3 + 5x$

$13x - 13$

2.) Solve the system by graphing.

$y = 2x - 1$

$y = 3x - 2$

(use slope-intercept method)

graph on the same set of axes

3.) Solve $7x = 5(x - 2)$.

$7x = 5x - 10$

$2x = -10$

$x = -5$

① $y = 2x - 1$ $m=2$ $Iy: (0,-1)$

② $y = 3x - 2$ $m=3$ $Iy: (0,-2)$

Graph using the slope-intercept method.

$$3y + 5x = -6$$

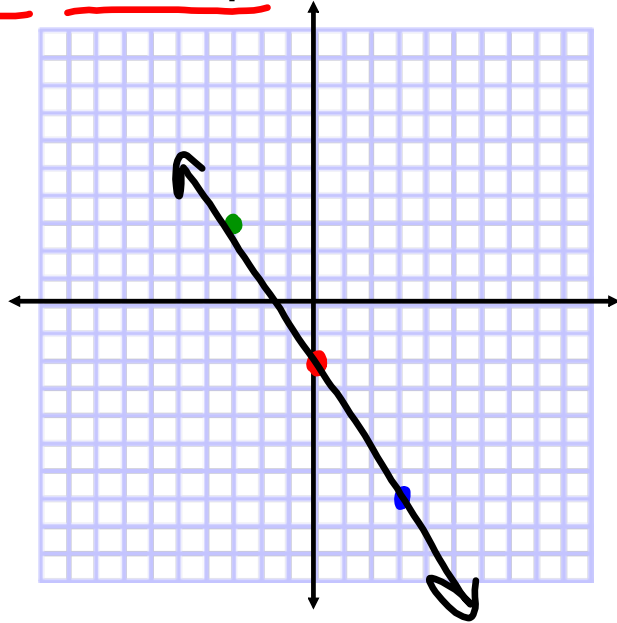
$-5x \quad -5x$

$$\frac{3y}{3} = \frac{-5x - 6}{3}$$

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

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

$$I_y: (0, -2)$$



Graph using the slope-intercept method.

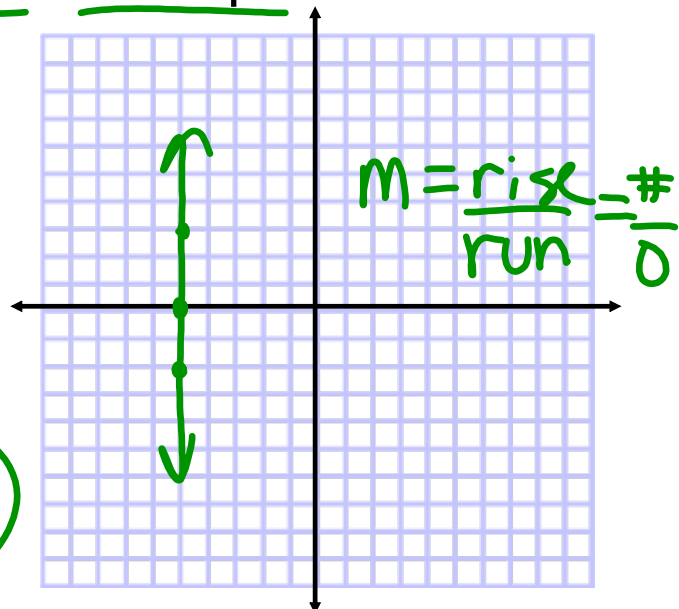
$$-2x - 4 = 6$$

$$-2x = 10$$

$$x = -5$$

$$m = \text{und}$$

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



Graph using the slope-intercept method.

$$3x + 2y = 12$$

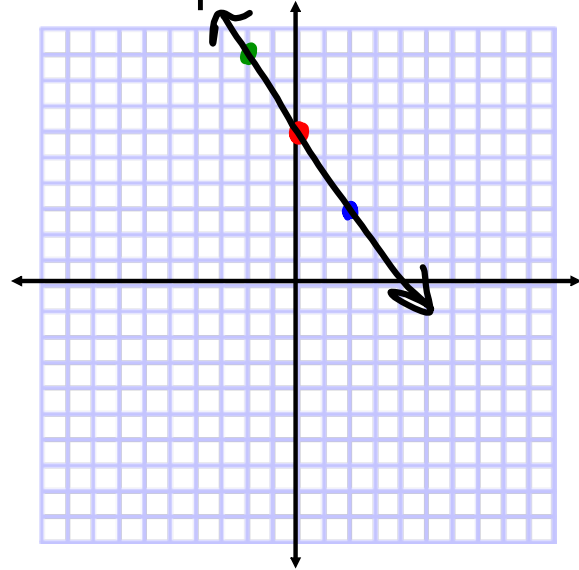
$$\begin{array}{r} -3x \\ -3x \end{array}$$

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

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

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

$$I_y: (0, 6)$$



Graph using the slope-intercept method.

$$-6y + 3 = 9$$

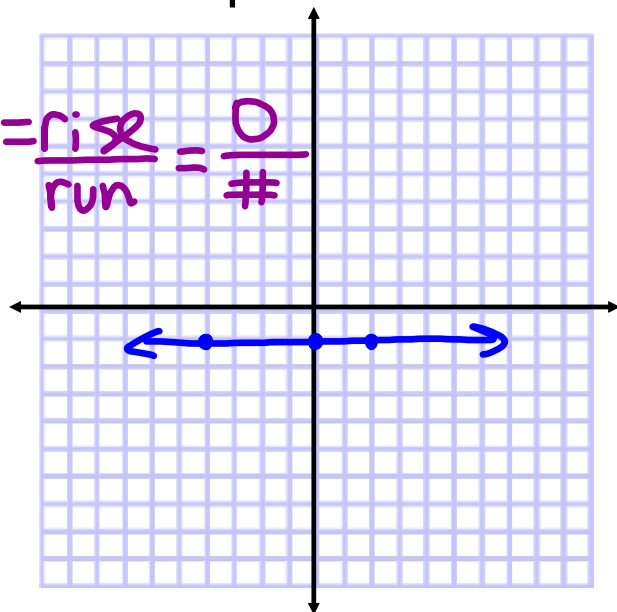
$$-6y = 6$$

$$y = -1$$

$$m = 0$$

$$I_y: (0, -1)$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{0}{\#}$$



Graph using the slope-intercept method.

$$2x - 6y = 12$$

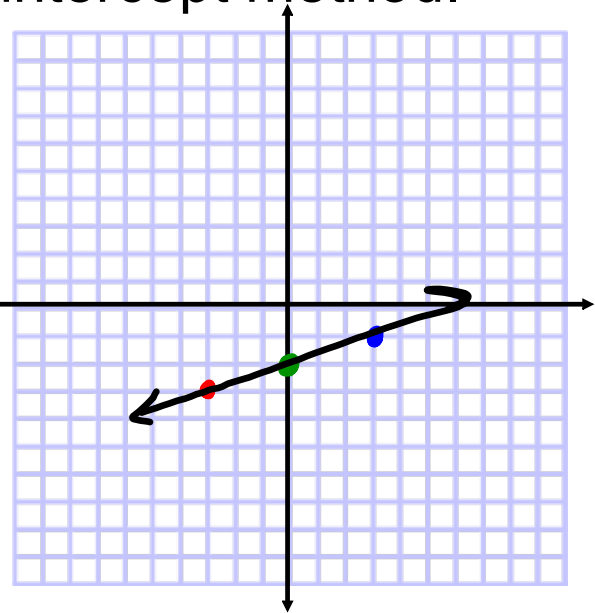
-2x *-2x*

$$\frac{-6y}{-6} = \frac{-2x + 12}{-6}$$

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

$$m = \frac{1}{3}$$

$$I_y: (0, -2)$$



Point-Slope Form of a Line:

$$y - y_1 = m(x - x_1)$$

"oppositik" *"oppositik"*

↓ ↓

y-coordinate slope *x*-coordinate

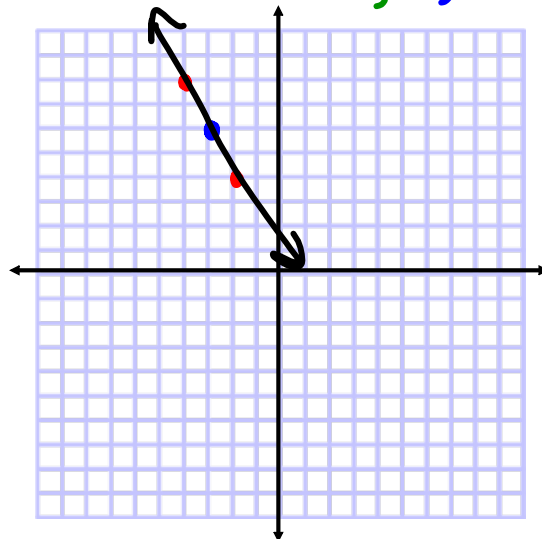
$$m =$$

$$(x, y):$$

$$y - 6 = -2(x + 3)$$

$$m = -2$$

$$(x, y): (-3, 6)$$

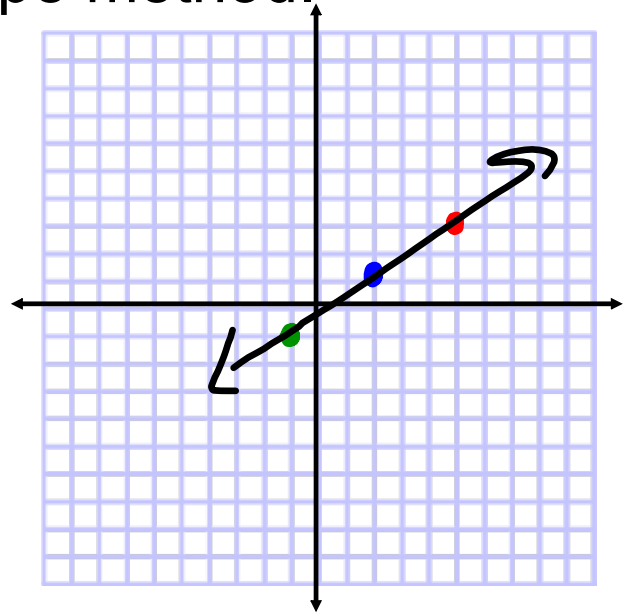


Graph using point-slope method.

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

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

$$(x, y) : (2, 1)$$

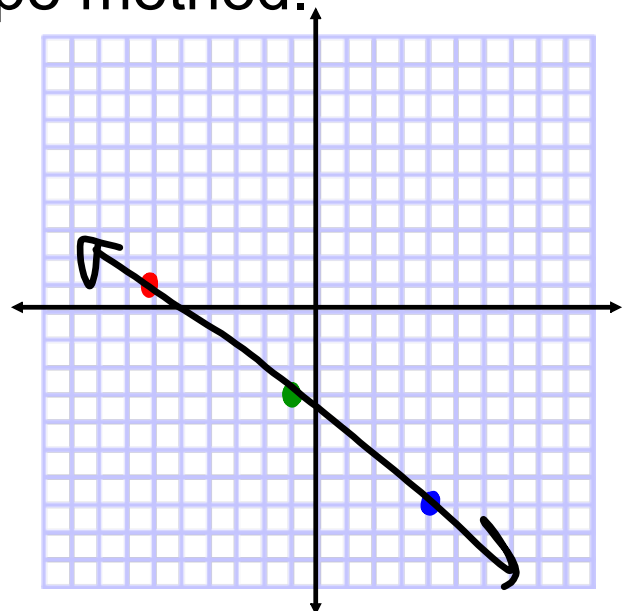


Graph using point-slope method.

$$y + 3 = -\frac{4}{5}(x + 1)$$

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

$$(x, y) : (-1, -3)$$



Use the point-slope form to write the equation in slope-intercept form. Use the slope-intercept form to write the equation in standard form.

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

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

$$(x, y): (2, 1)$$

① slope-intercept

$$y = mx + b$$

$$1 = \frac{2}{3}(2) + b$$

$$3 \left[1 = \frac{4}{3} + b \right]$$

$$3 = 4 + 3b$$

$$-1 = 3b$$

$$b = -\frac{1}{3}$$

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

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

$$y - 1 = \frac{2}{3}x - \frac{4}{3} \quad \begin{matrix} -\frac{4}{3} + 1 \\ -\frac{4}{3} + \frac{3}{3} \end{matrix}$$

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

② standard

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

$$-3 \left[\frac{2}{3}x + y = -\frac{1}{3} \right]$$

$$2x - 3y = 1$$

Use the given slope and point to write the point-slope form of the equation. Use this to write the equation in slope-intercept form. Use the slope-intercept form to write the equation in standard form.

$$m = -\frac{3}{4}$$

$$(x, y): (-8, 3)$$

① point-slope

$$y - y_1 = m(x - x_1)$$

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

② slope-intercept

$$4 \left[y - 3 = -\frac{3}{4}(x + 8) \right]$$

$$4y - 12 = -3(x + 8)$$

$$4y - 12 = -3x - 24$$

$$\frac{4y}{4} = \frac{-3x}{4} - \frac{12}{4}$$

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

③ standard

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

$$4 \left[\frac{3}{4}x + y = -3 \right]$$

$$3x + 4y = -12$$

Assignment:

Point-Slope Form Worksheet

#1-16