

# 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 \_\_\_\_\_ #50

**BELL RINGER** 0:00:00

1.) Solve the system by graphing.  
 $x = 4 - y$   
 $2x + 3y = 9$

2.) Solve  $|x - 3| + 4 = 5$ .  
 $x = 2, 4$      $|x - 3| = 1$

3.) Solve  $2(x - 1) = x + x - 2$ .  
 $2x - 2 = 2x - 2$      $-2 = -2$  identity

①  $x = 4 - y$      $y + x = 4$   
 $2x + 3y = 9$      $y = -x + 4$   
 $3y = -2x + 9$      $m = -1$   
 $y = -\frac{2}{3}x + 3$     I<sub>y</sub>: (0, 4)  
 $m = -\frac{2}{3}$   
I<sub>y</sub>: (0, 3)

solution: (3, 1)

Write the point-slope form of the equation of the line through the given points. Write the equation in slope-intercept form.

5) through:  $(2, -2)$  &  $(-4, 3)$

$$\textcircled{1} m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{3 - (-2)}{-4 - 2} = \frac{5}{-6}$$

$$m = -\frac{5}{6}$$

$$\textcircled{2} \text{point-slope}$$

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

$$y + 2 = -\frac{5}{6}(x - 2)$$

$$y - 3 = -\frac{5}{6}(x + 4)$$

$\textcircled{3}$  slope-intercept

$$6[y + 2 = -\frac{5}{6}(x - 2)]$$

$$6y + 12 = -5(x - 2)$$

$$6y + 12 = -5x + 10$$

$$\frac{6y}{6} = \frac{-5x}{6} - \frac{2}{6}$$

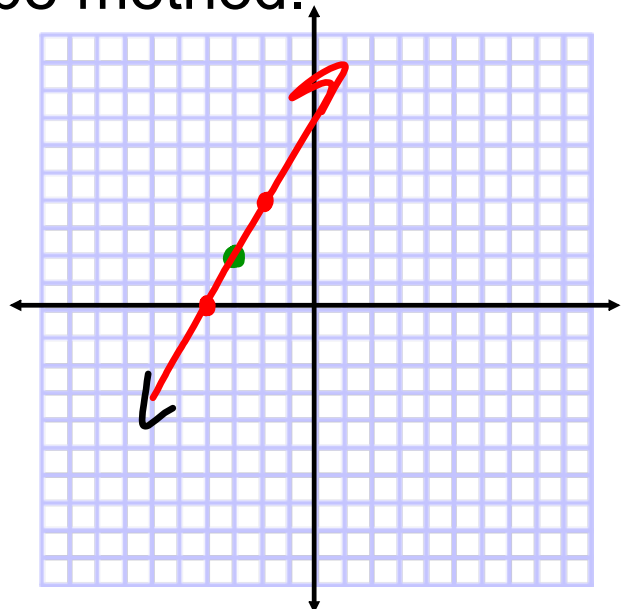
$$y = -\frac{5}{6}x - \frac{1}{3}$$

Graph using point-slope method.

$$11) y - 2 = 2(x + 3)$$

$$m = 2$$

$$(x, y) : (-3, 2)$$

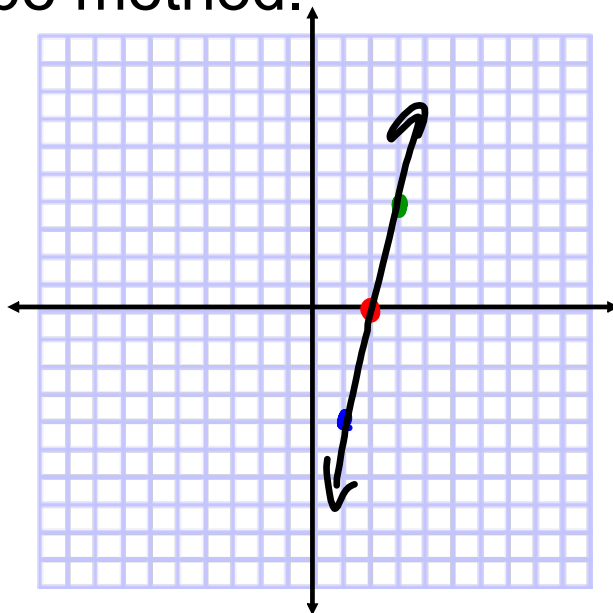


Graph using point-slope method.

$$y = 4(x - 2)$$

$$m = 4$$

$$(x, y) : (2, 0)$$



Write the equation of the line in point-slope form and slope-intercept form.

$$m = -\frac{10}{11}$$

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

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 6}{5 + 6} = -\frac{10}{11}$$

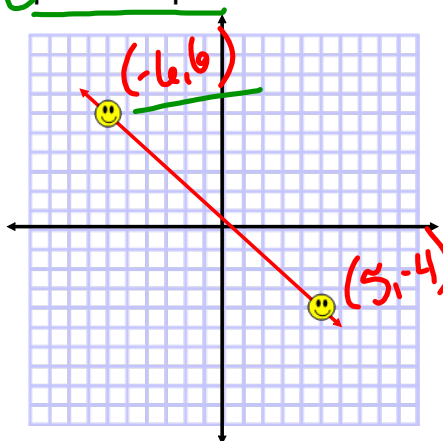
$$\textcircled{1} y - y_1 = m(x - x_1)$$

$$\text{point-slope: } y - 6 = -\frac{10}{11}(x + 6)$$

$\textcircled{2}$  slope-intercept:

$$y - 6 = -\frac{10}{11}x - \frac{60}{11}$$

$$y = -\frac{10}{11}x + \frac{6}{11}$$

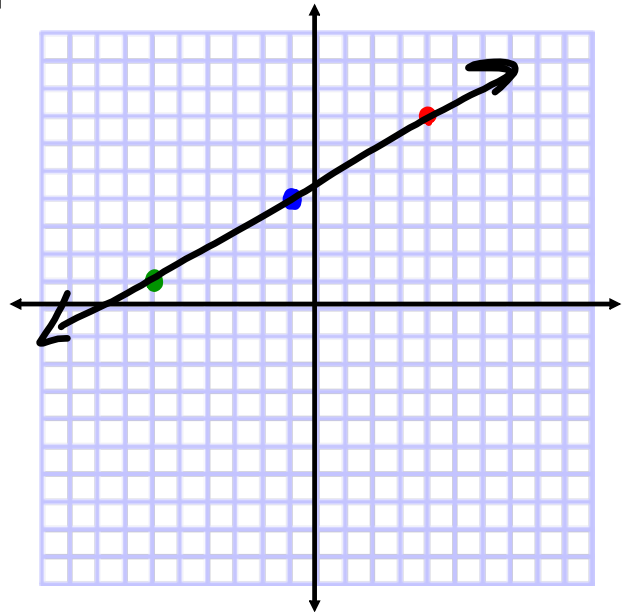


Graph using point-slope method.

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

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

$$(x, y) : (-1, 4)$$



Write the equation in ① point-slope form and then use the slope-intercept form to write the equation in ② standard form.

$$\underline{(2, 4)} \text{ \& } \underline{(-3, 5)} \quad m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 4}{-3 - 2} = \frac{1}{-5} \quad m = -\frac{1}{5}$$

① point-slope form:

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

$$y - 4 = -\frac{1}{5}(x - 2)$$

② slope-intercept:

$$y - 4 = -\frac{1}{5}x + \frac{2}{5}$$

$$y = -\frac{1}{5}x + \frac{22}{5}$$

③ standard form:

$$5 \left[ y = -\frac{1}{5}x + \frac{22}{5} \right]$$

$$5y = -x + 22$$

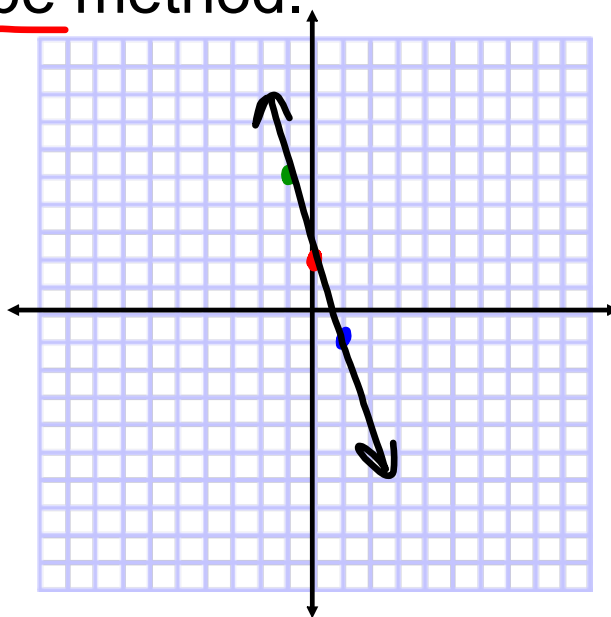
$$x + 5y = 22$$

Graph using point-slope method.

$$y = -3x + 2$$

$$m = -3$$

$$(x, y): (0, 2)$$



Find the equation for the line parallel to the given and passing through the indicated point.

~~$$-4x - 6y = 18$$~~

passes through:  $(-2, 4)$

$$m_{//} = -\frac{2}{3}$$

① point-slope:

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

③ standard form:

$$3 \left[ y = -\frac{2}{3}x + \frac{8}{3} \right]$$

$$3y = -2x + 8$$

$$2x + 3y = 8$$

~~$$-6y = 4x + 18$$~~

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

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

② slope-intercept:

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

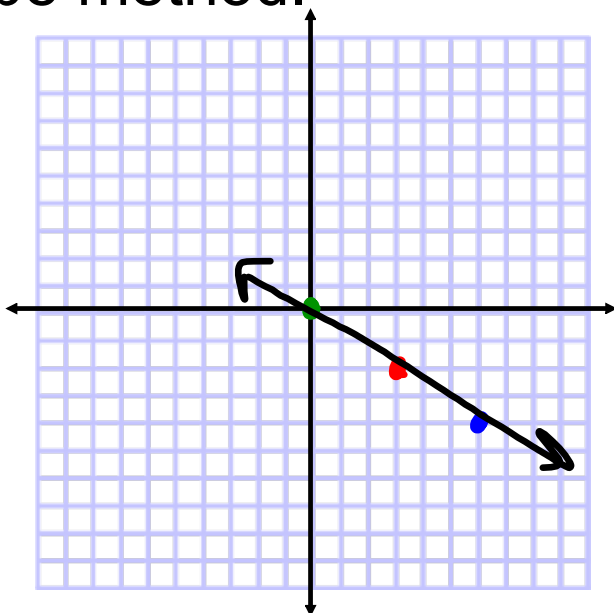
$$y = -\frac{2}{3}x + \frac{8}{3}$$

Graph using point-slope method.

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

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

$$(x, y) : (3, -2)$$

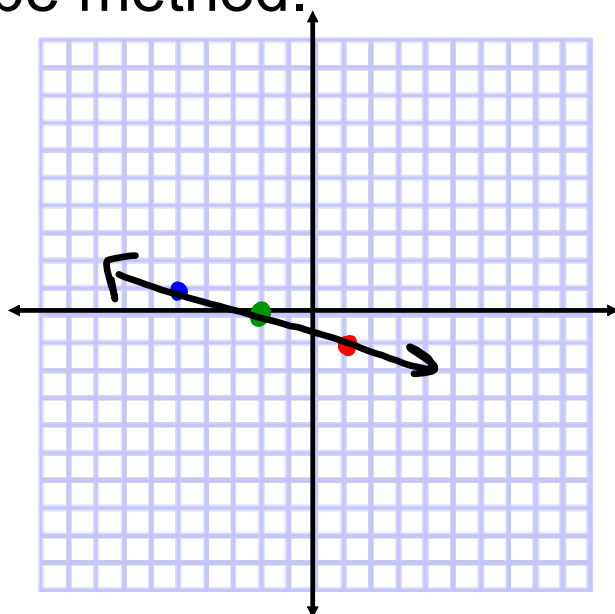


Graph using point-slope method.

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

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

$$(x, y) : (-2, 0)$$



Write the equation of the line in point-slope form and slope-intercept form.

$$m = 1$$

$$(x, y) : (0, 1)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{1 + 4}{0 + 5}$$

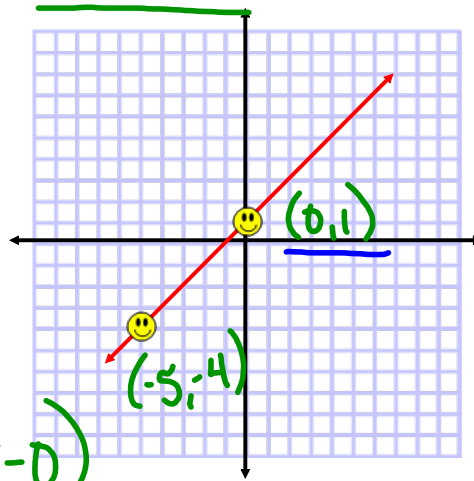
$$= \frac{5}{5}$$

$$m = 1$$

$$\textcircled{1} y - 1 = 1(x - 0)$$

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

$$y = x + 1$$



Write the equation in point-slope form and then use the slope-intercept form to write the equation in standard form.

$$(-4, 2) \text{ \& } (-3, 1)$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{1 - 2}{-3 + 4}$$

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

$$m = -1$$

$$\textcircled{1} y - 2 = -1(x + 4)$$

$$\textcircled{2} y - 2 = -x - 4$$

$$y = -x - 2$$

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

On a separate sheet of paper:

Graph using the point-slope method.

1)  $y + 2 = -3(x + 1)$

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

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

Write the equation in point-slope form and then use the slope-intercept form to write the equation in standard form.

4)  $(2,3)$  &  $(-4,5)$       5)  $(-1,-2)$  &  $(-3,4)$