

Chapter 6 Practice Exercises (Solutions at www.789adam.com)

Plot each point within the Cartesian Coordinate System.

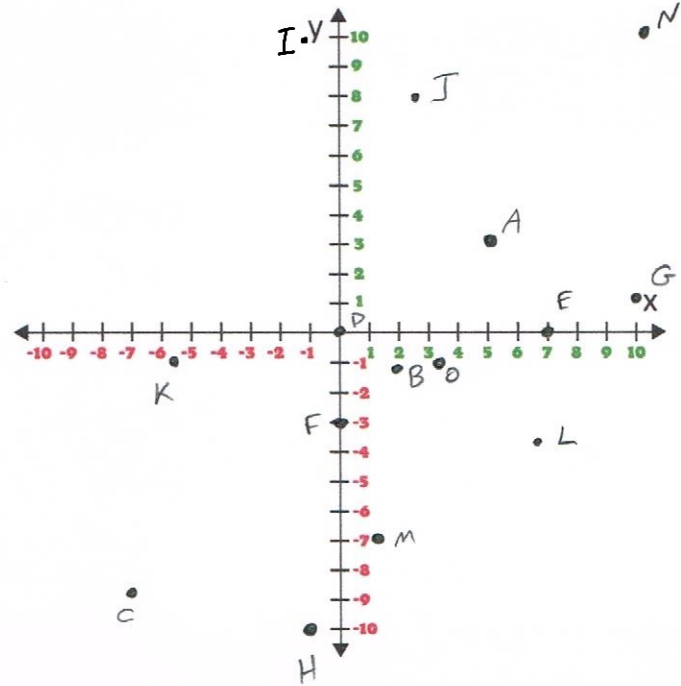
A(5, 3) B(2, -1) C(-7, -9)

D(0, 0) E(7, 0) F(0, -3)

G(10, 1) H(-1, -10) I(-1, 10)

J(2.5, 8) K(-5.5, -1) L(6.5, -3.5)

M(1, -7) N(10, 10) O(π , -1)



Identify the Slope of the Linear Equations.

$y = 5x + 2$

$m = 5$

$y = 3 - 2x$

$m = -2$

$y - 3x = 7$

$y = 3x + 7$
 $m = 3$

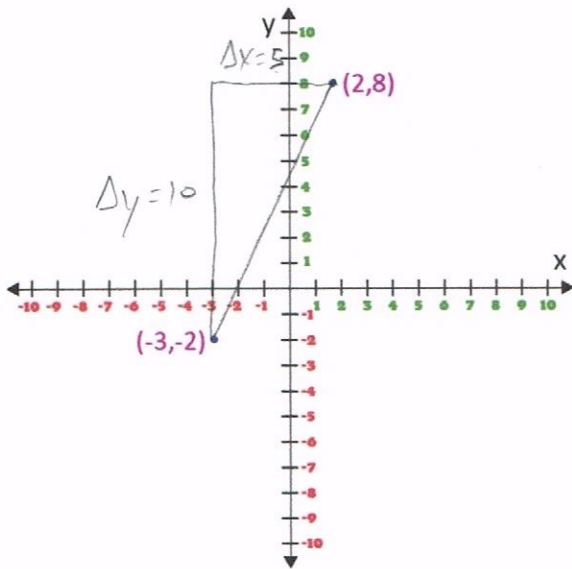
$y - 1 = \frac{2}{3}(x + 2)$

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

$x + 2y = 2$

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

Given the two points: Calculate the slope. Then, write an equation of the line in each of the common forms.



$m = \frac{\Delta y}{\Delta x} = \frac{10}{5} = 2$

Point-Slope Form:

$y - 8 = 2(x - 2)$

Slope-Intercept Form:

$y - 8 = 2x - 4$
 $y = 2x + 4$

Standard Form:

$y = 2x + 4$
 $-2x + y = 4$
 $2x - y = -4$

Write an equation of each line. If a particular format is specified, use it. Otherwise, use whatever form you prefer.

Parallel to $y = -2x + 1$ and passes through (5, 5)

$m = -2$

$y - 5 = -2(x - 5)$

$y - 5 = -2x + 10$

$y = -2x + 15$

$2x + y = 15$

Perpendicular to $y = \frac{1}{3}x - 7$ with y-intercept at 3

$m = -3$

$y = -3x + 3$

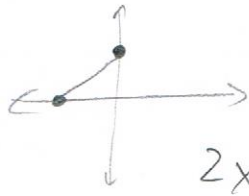
$y - 3 = -3(x - 0)$

$3x + y = 3$

x-intercept at -6, y-intercept at 3 (Standard Form)

$$(-6, 0) \quad (0, 3)$$

$$m = \frac{\Delta y}{\Delta x} = \frac{-6 - 0}{0 - 3} = \frac{-6}{-3} = 2$$

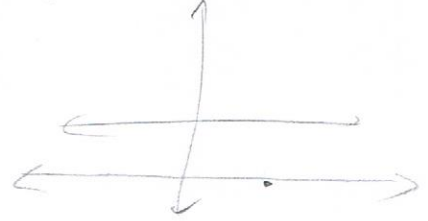


$$2x - y = 3$$

$$y - 3 = 2(x - 0) \quad y = 2x - 3$$

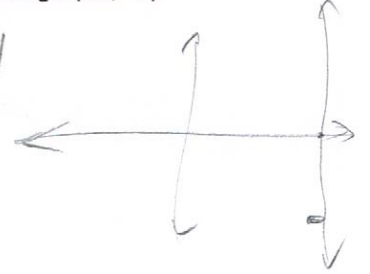
Horizontal line passing through (3, -5)

$$y = -5$$



Vertical Line passing through (11, -7)

$$x = 11$$



Passes through (3, 2) and (6, 7) (Standard Form)

$$m = \frac{\Delta y}{\Delta x} = \frac{7 - 2}{6 - 3} = \frac{5}{3}$$

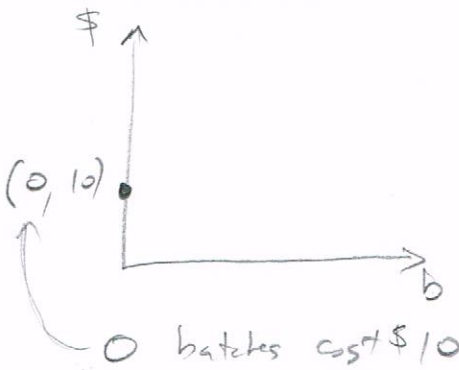
$$y - 2 = \frac{5}{3}(x - 3)$$

$$5x - 3y = 9$$

$$\left[y - 2 = \frac{5}{3}x - 5 \right] \times 3$$

$$3y - 6 = 5x - 15$$

Making cookies costs me \$10 to buy cookie sheets, plus \$3 for the ingredients in each batch. Write a linear equation that represents the relationship between total cost and number of batches of cookies made.



\$ = Cost
b = batches

For each one batch (run) cost goes up \$3 (rise)

$$m = \frac{\text{rise}}{\text{run}} = \frac{3}{1} = 3$$

$$\$ - 10 = 3(b - 0)$$

$$\underline{\$ = 3b + 10}$$