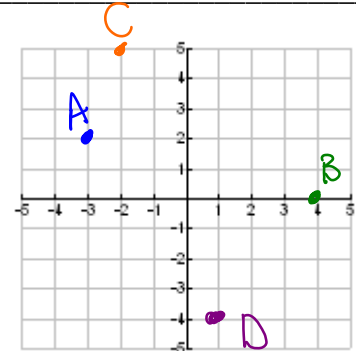


4 I can use previous skills learned as they apply to Chapter 4 topics.

4.1A I can plot points in a coordinate plane.

Ex 1a: Graph and label the following points on the coordinate plane:

A: (-3, 2)   B: (4, 0)   C: (-2, 5)   D: (1, -4)



4.1B I can identify the coordinates of a specific point in a coordinate plane.

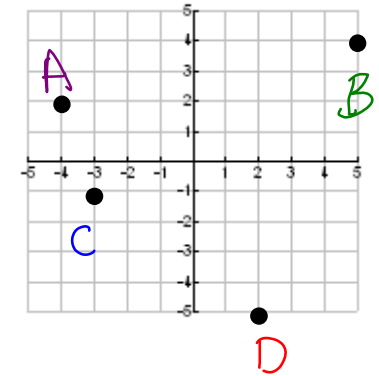
Ex 1b: Identify the coordinates of the points on the coordinate p.

A = (-4, 2)

B = (5, 4)

C = (-3, -1)

D = (2, -5)



4.1C I can graph a function given its equation and domain.

Ex 1c: Graph the function and state its domain.

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

| X  | Y | Ordered Pair |
|----|---|--------------|
| -4 | 5 | (-4, 5)      |
| -2 | 4 | (-2, 4)      |
| 0  | 3 | (0, 3)       |
| 2  | 2 | (2, 2)       |
| 4  | 1 | (4, 1)       |

Domain: -4, -2, 0, 2, 4  
Range: 5, 4, 3, 2, 1

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

$$= 2 + 3$$

$$= 5$$

$$y = -\frac{1}{2}(0) + 3$$

$$= 0 + 3$$

$$= 3$$

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

$$= 1 + 3$$

$$= 4$$

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

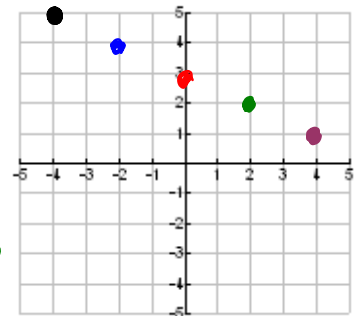
$$= -1 + 3$$

$$= 2$$

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

$$= -2 + 3$$

$$= 1$$

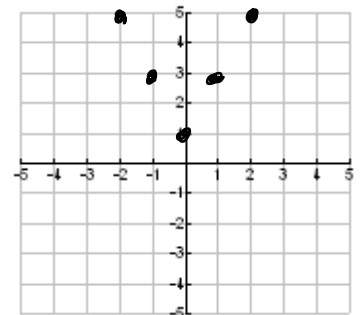


4.1D I can graph a function given a table.

Ex 1d: Graph the function using the table given.

(-2, 5) (-1, 3) (0, 1) (1, 3) (2, 2)

|                  |    |    |   |   |   |
|------------------|----|----|---|---|---|
| Years since 2005 | -2 | -1 | 0 | 1 | 2 |
| Rainfall         | 5  | 3  | 1 | 3 | 2 |



4.2A I can identify if an ordered pair is a solution to an equation with 2 variables.

2a: Tell whether  $(4, -5)$  is a solution of  $3x - 2y = 22$ .

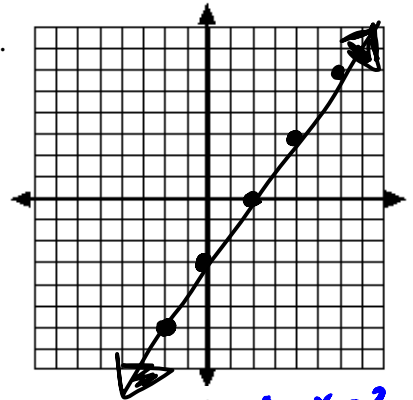
$$\begin{array}{r} 3(4) - 2(-5) = 22 \\ 12 + 10 = 22 \quad \checkmark \end{array} \quad \boxed{\text{Yes}}$$

4.2B I can graph an equation by first creating a table, then graphing.

2b: Graph the equation  $-3x + 2y = -6$ .  $y = \frac{3}{2}x - 3$

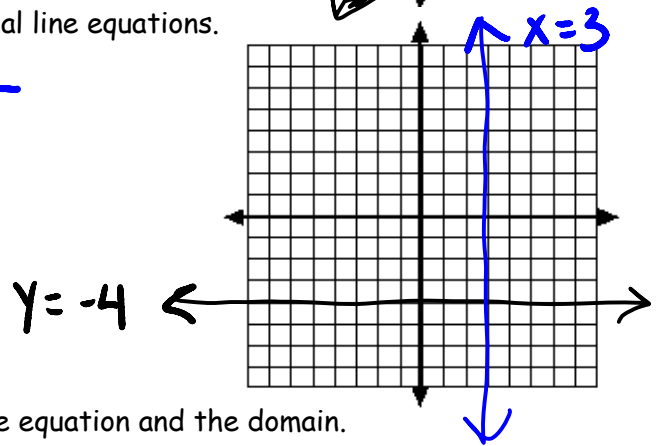
|   |    |    |   |   |   |
|---|----|----|---|---|---|
| x | -2 | 0  | 2 | 4 | 6 |
| y | -6 | -3 | 0 | 3 | 6 |

$$\begin{array}{l} y = \frac{3}{2}(-2) - 3 \\ = -3 - 3 \\ = -6 \end{array} \quad \begin{array}{l} y = \frac{3}{2}(0) - 3 \\ = 0 - 3 \\ = -3 \end{array}$$



4.2C I can recognize and graph horizontal and vertical line equations.

2c: Graph the equations  $y = -4$  and  $x = 3$ .



4.2D I can identify the range of a function, given the equation and the domain.

2d:  $y = -3x + 5$

| X  | Y  | Ordered Pair |
|----|----|--------------|
| -4 | 17 | $(-4, 17)$   |
| -2 | 11 | $(-2, 11)$   |
| 0  | 5  | $(0, 5)$     |
| 2  | -1 | $(2, -1)$    |
| 4  | -7 | $(4, -7)$    |

Range  $\underline{17, 11, 5, -1, -7}$

$$\begin{array}{l} y = -3(-4) + 5 \\ = 12 + 5 \\ = 17 \end{array}$$

$$\begin{array}{l} y = -3(0) + 5 \\ = 0 + 5 \\ = 5 \end{array}$$

$$\begin{array}{l} y = -3(4) + 5 \\ = -12 + 5 \\ = -7 \end{array}$$

$$\begin{array}{l} y = -3(-2) + 5 \\ = 6 + 5 \\ = 11 \end{array}$$

$$\begin{array}{l} y = -3(2) + 5 \\ = -6 + 5 \\ = -1 \end{array}$$

4.2E I can solve a problem, given a function and the value of one of the variables.

2e: Find the value of  $y$  given  $4x - 3y = 12$  if  $x = 6$ .

$$\begin{array}{r} 4(6) - 3y = 12 \\ 24 - 3y = 12 \\ -24 \quad -24 \\ \hline -3y = -12 \\ \frac{-3y}{-3} = \frac{-12}{-3} \\ \boxed{y = 4} \end{array}$$

4.3A I can find the intercepts of the graph of an equation.

3a: Find the x-intercept and the y-intercept of the graph of  $3x + 7y = 21$ .

$(x, 0)$   
x-intercept  $(7, 0)$

$$3x + 7(0) = 21$$

$$\frac{3x}{3} = \frac{21}{3}$$

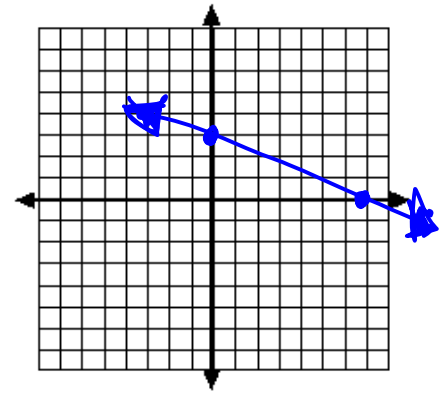
$$x = 7$$

$(0, y)$   
y-intercept  $(0, 3)$

$$3(0) + 7y = 21$$

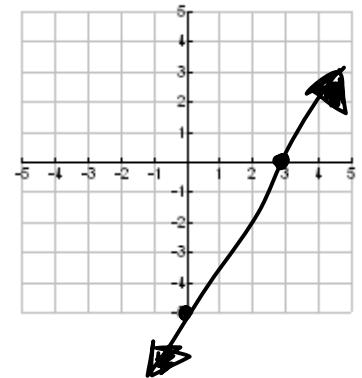
$$\frac{7y}{7} = \frac{21}{7}$$

$$y = 3$$



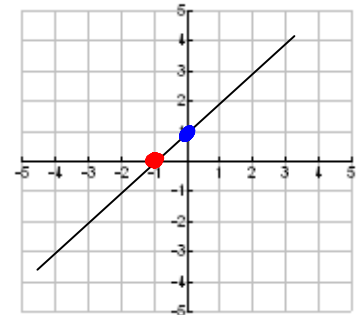
4.3B I can use intercepts to graph an equation.

3b: Graph the function given the x-intercept is -3  $(-3, 0)$  and the y-intercept is -5.  $(0, -5)$



4.3C I can use a graph to find intercepts.

3c: Find the x-intercept  $(-1, 0)$  and y-intercept  $(0, 1)$  of the function represented on the coordinate plane.



4.3D I can use an equation to find acceptable solutions to a problem.

3d: George has \$6 to spend at the bakery. Bread costs \$3.00 per loaf, pecan rolls cost \$2.00 each. Write and graph an equation. List 3 possible combinations that can be purchased.

$$6 = 3x + 2y$$

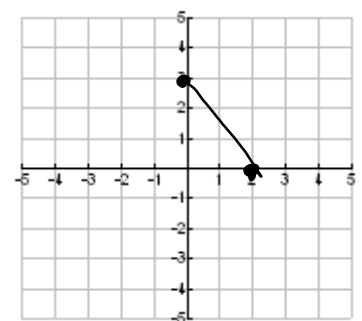
$$y = -\frac{3}{2}x + 3$$

$x = \# \text{ loafs}$      $y = \# \text{ rolls}$

0 loafs    3 rolls

2 loafs    0 rolls

only 2 possible combinations



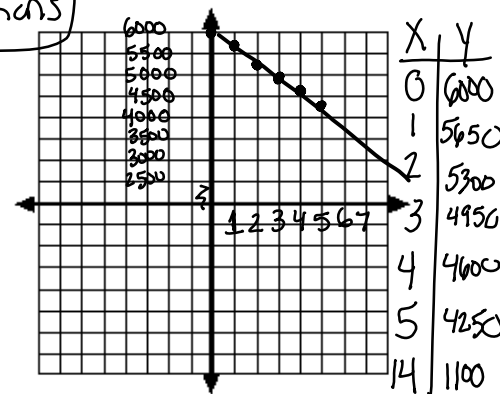
4.3E I can use a linear model.

3e: Solve the problem graphically and algebraically. The number of records sold at a local music store between 1975 and 1990 is approximately given by  $y = -350t + 6000$ , where  $y$  represents the number of records sold and  $t$  represents the year with  $t = 0$  corresponding to 1975. According to this model, in what year did the store sell 1100 records?

$$1100 = -350t + 6000$$

$$4900 = -350t$$

$$t = 14 \text{ years} = \boxed{1989}$$

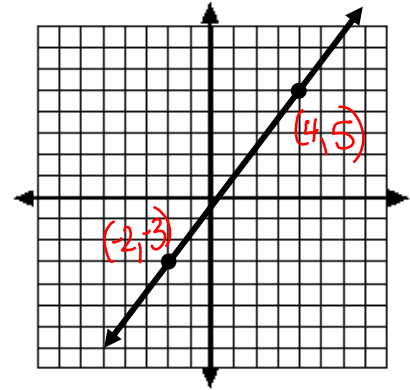


4.4A I can find the slope of a line using two points on the line.

4a: Find the slope of the line using the points on the coordinate plane.

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

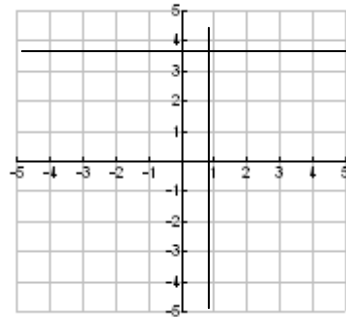
$$m = \frac{5 - (-3)}{4 - (-2)} = \frac{8}{6} = \boxed{\frac{4}{3}}$$



4.4B I can identify the slope of a vertical or horizontal line.

4b: Find the slope of the line  $y = 4$  0

$x = 1$  undefined



4.4C I can use slope to identify the rate of change.

4c: Find the rate of change in rainfall with respect to time.

|                  |    |    |   |    |    |
|------------------|----|----|---|----|----|
| Years since 2005 | -4 | -2 | 0 | 2  | 4  |
| Rainfall         | 1  | 4  | 7 | 10 | 13 |

$$\boxed{\frac{3}{2}}$$



$$m = \frac{4 - 1}{-2 - (-4)} = \frac{3}{2}$$

$$m = \frac{10 - 7}{2 - 0} = \frac{3}{2}$$

$$m = \frac{7 - 4}{0 - (-2)} = \frac{3}{2}$$

$$m = \frac{13 - 10}{4 - 2} = \frac{3}{2}$$

4.4D I can use a graph to find and compare rates of change.

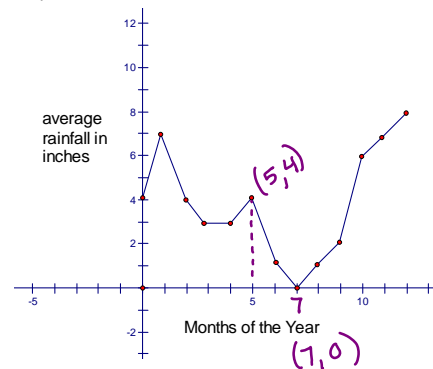
4d: Describe the rate of change between months 5 and 7.

$(5, 4)$   $(7, 0)$

$$m = \frac{0 - 4}{7 - 5} = \frac{-4}{2} = -2$$

- since negative slope rainfall dropped

- average dropped 2 inches per month between 5, 7 months



4.5A I can identify slope and y-intercept.

5a: Find the slope and y-intercept of the line with the given equation.

$$\begin{array}{r} -6x - 3y = 9 \\ +6x \quad +6x \\ \hline -3y = 6x + 9 \\ \frac{-3y}{-3} = \frac{6x}{-3} + \frac{9}{-3} \\ y = -2x - 3 \end{array}$$

$$\boxed{y\text{-int} = -3 = (0, -3)}$$

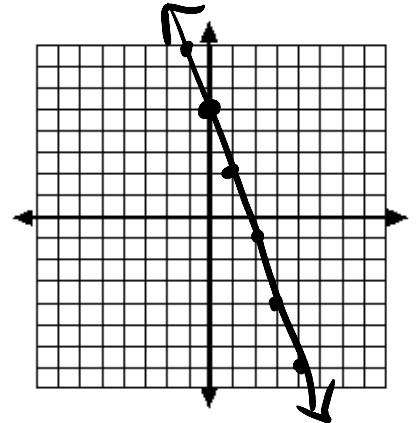
$$\boxed{m = -\frac{2}{1}}$$

4.5B I can graph an equation using slope-intercept form.

5b: Graph the equation  $3x + y = 5$

$$\begin{array}{r} -3x \quad -3x \\ \hline y = -3x + 5 \end{array}$$

slope                  y-int



4.5C I can identify parallel lines.

5c: Choose the two equations that represent parallel lines.

a.  $2x + 3y = 9$

b.  $-2x + 3y = 6$

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

$$\begin{array}{r} a. \quad 2x + 3y = 9 \\ -2x \quad -2x \\ \hline 3y = -2x + 9 \\ \frac{3y}{3} = \frac{-2x}{3} + \frac{9}{3} \\ y = -\frac{2}{3}x + 3 \end{array}$$

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

$$\begin{array}{r} b. \quad -2x + 3y = 6 \\ +2x \quad +2x \\ \hline 3y = 2x + 6 \\ \frac{3y}{3} = \frac{2x}{3} + \frac{6}{3} \\ y = \frac{2}{3}x + 2 \end{array}$$

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

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

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

a, c are parallel since they have the same slope.

**4.6A** I can identify direct variation equations.

6a: Tell whether the equation represents direct variation. If so, identify the constant of variation.

$$\begin{array}{r} a. \quad 3x - 5y = 0 \\ \quad -3x \quad -3x \\ \hline \end{array}$$

$$\begin{array}{r} -5y = -3x \\ \hline -5 \quad -5 \end{array}$$

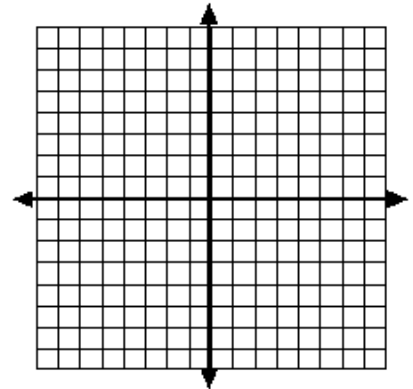
$$y = \frac{3}{5}x$$

constant =  $\frac{3}{5}$ , YES direct

$$\begin{array}{r} b. \quad -2x + y = 5 \\ \quad +2x \quad +2x \\ \hline \end{array}$$

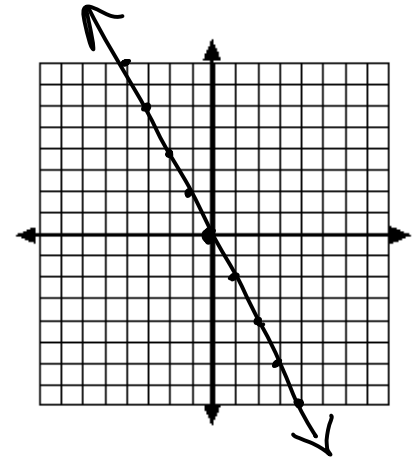
$$y = 2x + 5$$

NOT Direct Variation



**4.6B** I can graph direct variation equations.

6b: Graph the direct variation equation  $y = -2x + 0$   
 slope  $\uparrow$   $\uparrow$  y-int



**4.6C** I can write and use direct variation equations.

6c: Write a direct variation equation and use it to answer the question.

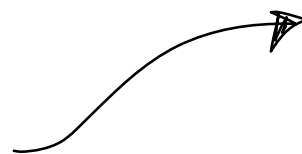
The amount of sugar(s) needed for iced tea(t) varies directly with the number of gallons of iced tea being made. The recommended amount is 7 tablespoons for every 2 gallons of tea. How much sugar is needed for 35 gallons of tea?

$$\begin{array}{l} y = ax \\ s = ag \end{array}$$

s = # sugar  
g = # gallons tea

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

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



$$\begin{array}{l} y = ax \\ y = \frac{7}{2}(35) \end{array}$$

$y = \frac{245}{2}$  sugars

4.7A I can find the value of the independent variable given the value of the dependent variable.

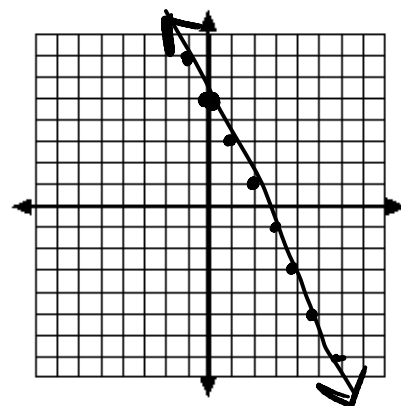
7a: For the function  $f(x) = 3x - 5$ , find the value of  $x$  so that  $f(x) = 7$

$$\begin{array}{r} 7 = 3x - 5 \\ +5 \quad +5 \\ \hline 12 = 3x \\ \frac{12}{3} = \frac{3x}{3} \\ \boxed{x = 4} \end{array}$$

4.7B I can graph linear equations using function notation.

7b: Graph  $f(x) = -2x + 5$

$$y = -2x + 5$$



4.7C I can use the concepts as presented in word problems.

7c: Write the equation of the function and graph the function.

Taylor's cell phone company charges a base cost of \$30 per month and \$1 per each long distance call. Write a function to represent her cell phone bill as a function of number of long distance phone calls, then graph it.

$$\boxed{y = 1x + 30}$$

$y =$  total bill amt.  
 $x =$  # long distance cell calls

