

**Unit 6 Review Answer Key**

1.

$$4y - 2x = -16$$

$$+2x \quad +2x$$

$$\frac{4y}{4} = \frac{2x - 16}{4}$$

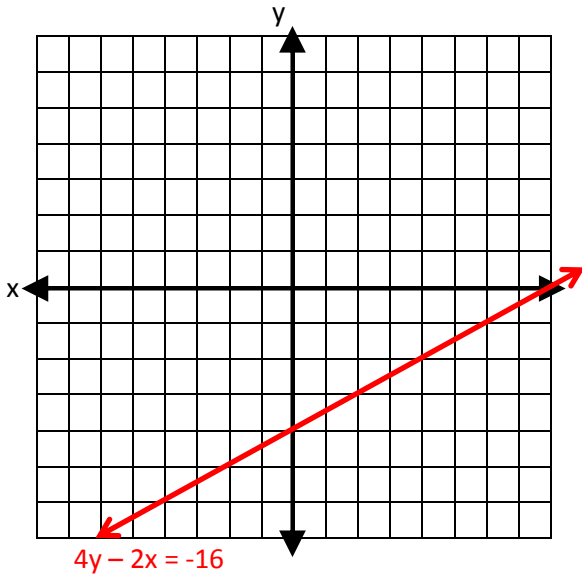
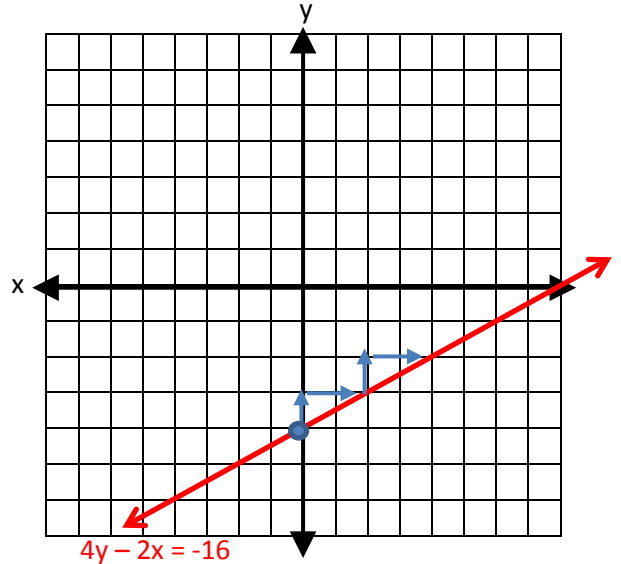
$$y = \frac{1}{2}x - 4$$

$$\text{slope (m)} = \frac{1}{2} \begin{matrix} \uparrow \\ \rightarrow \end{matrix} \text{ or } \begin{matrix} \downarrow \\ \leftarrow \end{matrix}$$

**y-intercept: -4 (0,-4)**

**Slope – Intercept Method**

- 1) Solve the equation for y ( $y = mx + b$ ).
- 2) Plot the y-intercept (starting point).
- 3) Use the slope to plot the next few points.
- 4) Connect the points and create a line.
- 5) Label the graph with the equation.



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

x	y
-4	-6
-2	-5
0	-4
2	-3
4	-2

**Table of Values Method**

- 1) Solve the equation for y ( $y = mx + b$ ).
- 2) Create a table by choosing 5 x-values (pick multiples of the denominator if the coefficient is a fraction).
- 3) Substitute each x-value (input) into the equation and find the y-value (output).
- 4) Plot the ordered pairs, connect the points and create a line.
- 5) Label the graph with the equation.

$$4y - 2x = -16$$

(X,0) (0,Y)

$$4(0) - 2x = -16$$

$$\frac{-2x}{-2} = \frac{-16}{-2}$$

$$x = 8$$

**x-intercept: (8,0)**

$$4y - 2(0) = -16$$

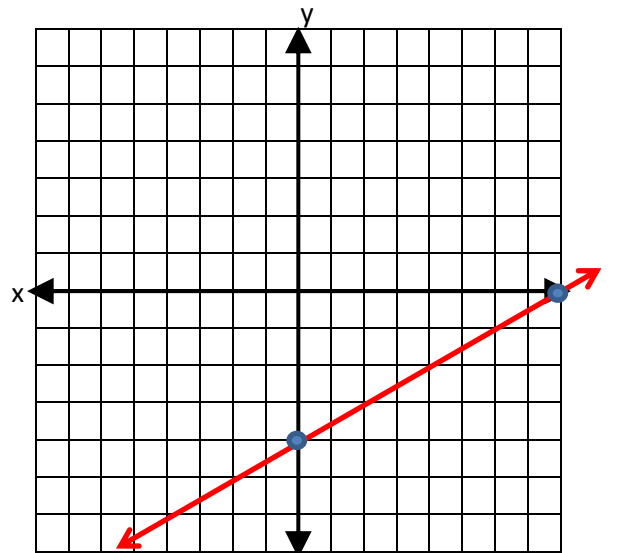
$$\frac{4y}{4} = \frac{-16}{4}$$

$$y = -4$$

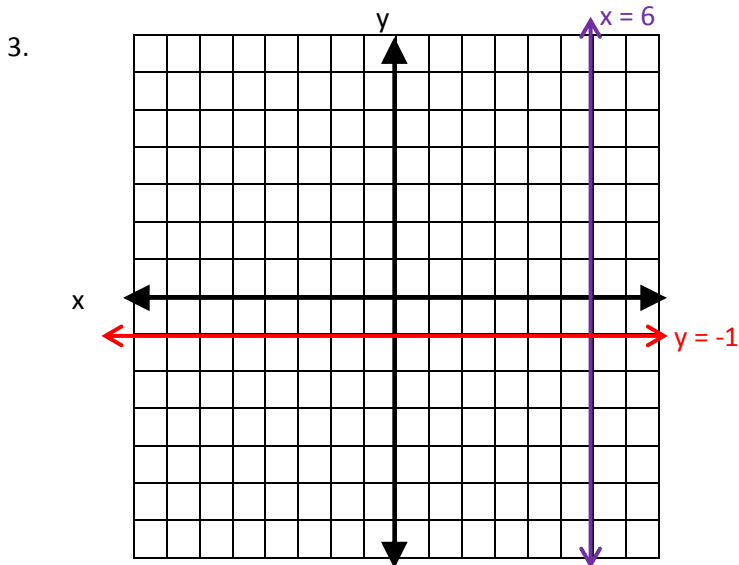
**y-intercept: (0,-4)**

**Intercept Method**

- 1) To find the y-intercept, substitute x with 0 and solve for y.
- 2) To find the x-intercept, substitute y with 0 and solve for x.
- 3) The x and y – intercepts provide you with two points on the line. Plot the points and create the line.
- 4) Label the graph with the equation.



2.  $y = 3x - 2$   
 $-287 = 3(-95) - 2$   
 $-287 = -285 - 2$   
 $-287 = -287$
- Yes it is part of the graph. The ordered pair makes the equation true when the coordinates are substituted for the x and y variables.



**Common Solution: (6,-1)**

<b>x = 6</b>	
x	y
6	-2
6	4

<b>y = -1</b>	
x	y
-3	-1
0	-1

4. A.  
 Choice A translates to  $y = 2 - \frac{2}{3}x$ . The slope of the line graphed is  $-\frac{2}{3}$  and the y-intercept of the line graphed is 2.

5. I disagree. Kate is incorrect. The slope of the line  $y = \frac{3}{4}x + 3$  is  $\frac{3}{4}$  which is a positive slope. The slope of the line pictured is  $-\frac{3}{4}$ .

6. The relation **is a function** because each input has been assigned to one output. It's OK that -1 and 1 have both been assigned to 5. Both inputs have only been assigned to one output.

7. a) (6,3) (1,4)

$$\frac{\Delta y}{\Delta x} = \frac{3-4}{6-1} = \frac{-1}{5} = -\frac{1}{5}$$

- b) (-9,4) (-6,4)

$$\frac{\Delta y}{\Delta x} = \frac{4-4}{-9-(-6)} = \frac{0}{-3} = \mathbf{0}$$

Horizontal Line

*Points can also be graphed and the slope can be calculated using  $\frac{\text{rise}}{\text{run}}$*

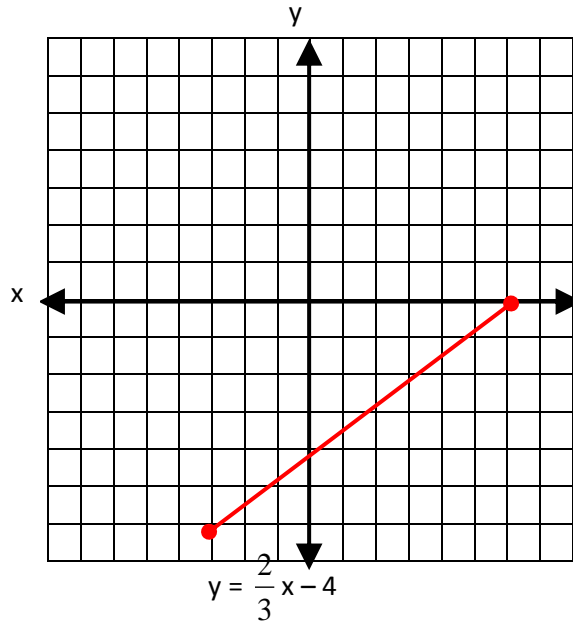
8.

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

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

**Range:**  $-6 \leq y \leq 0$  or  $[-6, 0]$

All real numbers between and including -6 and 0.

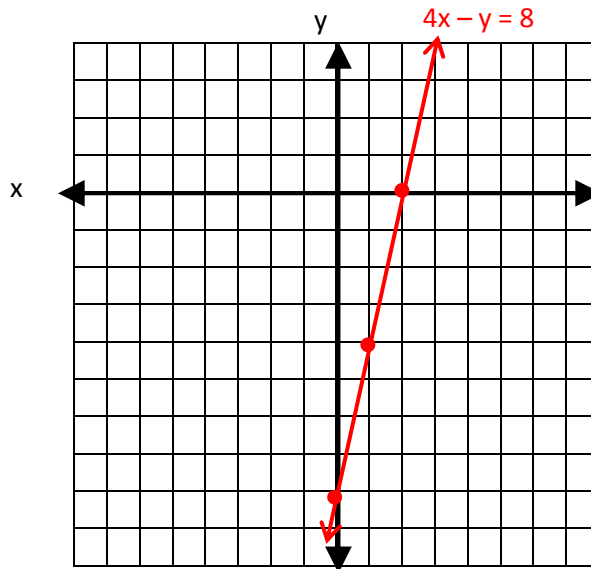


9.  $4x - y = 8$

$$\begin{aligned} -4x & \quad -4x \\ -y &= -4x + 8 \\ -1 & \quad -1 \\ y &= 4x - 8 \end{aligned}$$

slope (m) = 4/1

y-intercept: -8 (0,-8)



10. **Domain:**  $-5 \leq x \leq 2$   
 $[-5, 2]$

**Range:**  $-3 \leq y \leq 6$   
 $[-3, 6]$

