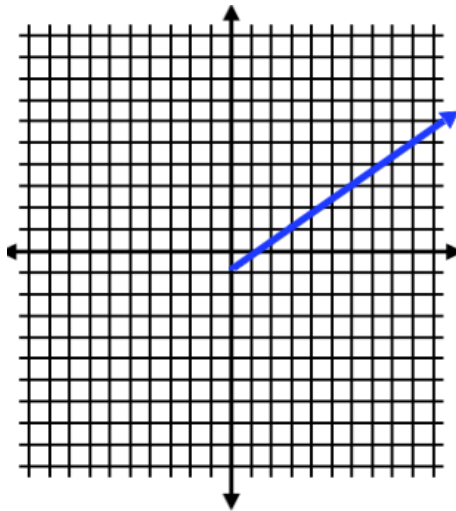**Name:**_____**Date:**_____**Per:**_____

Midterm Review Warm Up 4

Section 4.2 – Graphing Lines by Making a Table

Ex: Graph $y = \frac{2}{3}x - 1$ with a domain of $x \geq 0$ by making a table. (Be sure to choose appropriate values for x)
    *MUST choose numbers 0 or greater (the domain is restricted) and SHOULD choose numbers that are multiples of 3 because the coefficient of x is a fraction with a denominator of 3.

x	y
0	−1
3	1
6	3
9	5
12	7

Section 4.3 – Graphing Lines by Using x and y Intercepts

Ex: Find the x and y intercepts of the equation:
$4x - 6y = -18$

Ex: Graph the equation $-2y - 4x = 16$ using x and y intercepts.

*remember to find intercepts by changing the opposite Coordinate to 0 and solving.

x-intercept:
$4x - 6(0) = -18$
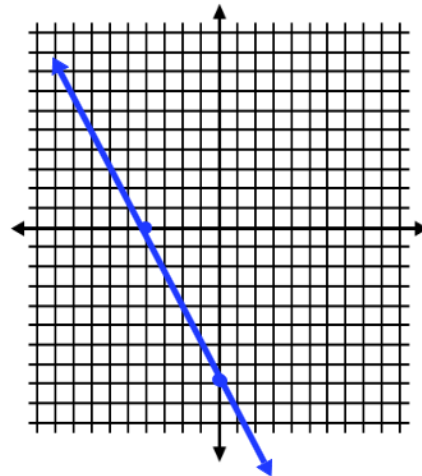$\dfrac{4x}{4} = \dfrac{-18}{4}$
$x = -4.5$

y-intercept:
$4(0) - 6y = -18$
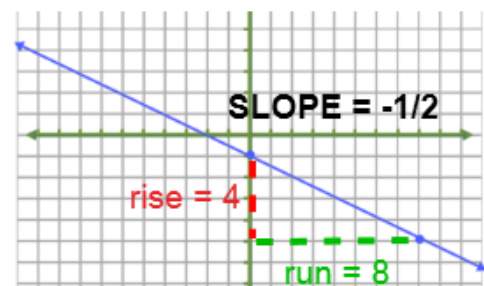$\dfrac{-6y}{-6} = \dfrac{-18}{-6}$
$y = 3$

Section 4.4 – Finding Slope and Rate of Change

Ex: Find the slope of the line that passes through the points $(-2, 8)$ and $(-2, 12)$

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

$$m = \frac{12-8}{-2--2} = \frac{4}{0} = \text{undefined.}$$

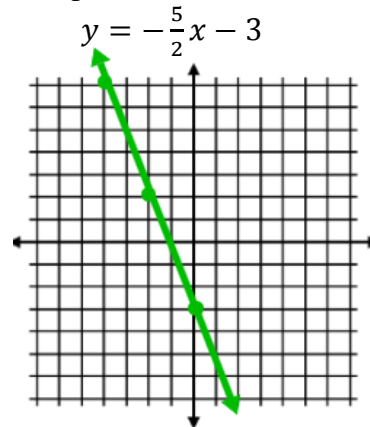**Ex:** Find the slope of the line graphed.

SLOPE = -1/2

rise = 4

run = 8

Section 4.5 – Graphing Lines Using Slope-Intercept Form

Ex: Write the following equation in slope-intercept form and identify the slope and y-intercept:

$$2x - 3y = 12$$
$$\underline{-2x \qquad\qquad -2x}$$
$$\underline{-3y} = \underline{12 - 2x}$$
$$-3 \qquad -3$$
$$y = -4 + \frac{2}{3}x$$

Slope:__-4__ y-intercept:___$\frac{2}{3}$___

Ex: Graph the following equation using slope-intercept form:

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

Section 4.6 – Direct Variation

Ex: Does the following equation represent direct variation? Why or why not?

$$3x + y - 2 = -2$$
$$\underline{-3x \qquad\qquad -3x}$$
$$y - 2 = -2 - 3x$$
$$\underline{+2 \quad +2}$$
$$y = 3x \qquad \text{Yes, it can be written in the form } y = ax \text{ (the } y\text{-intercept is 0)}$$

Ex: If y varies directly with x and $y = 12$ when $x = 2$, find the constant of variation **_and_** write the direct variation equation representing the situation.

$$y = ax$$
$$12 = a(2)$$
$$6 = a \qquad\qquad y = 6x$$

Section 4.7 – Function Notation

Ex: Evaluate the function
$f(x) = -2x + 5$ when $x = 4$

$$f(4) = -2(4) + 5$$
$$f(4) = -8 + 5$$
$$f(4) = -3$$

Ex: For the function $f(x) = 4x - 2$, find the value of x when $f(x) = 10$

$$10 = 4x - 2$$
$$12 = 4x$$
$$3 = x$$