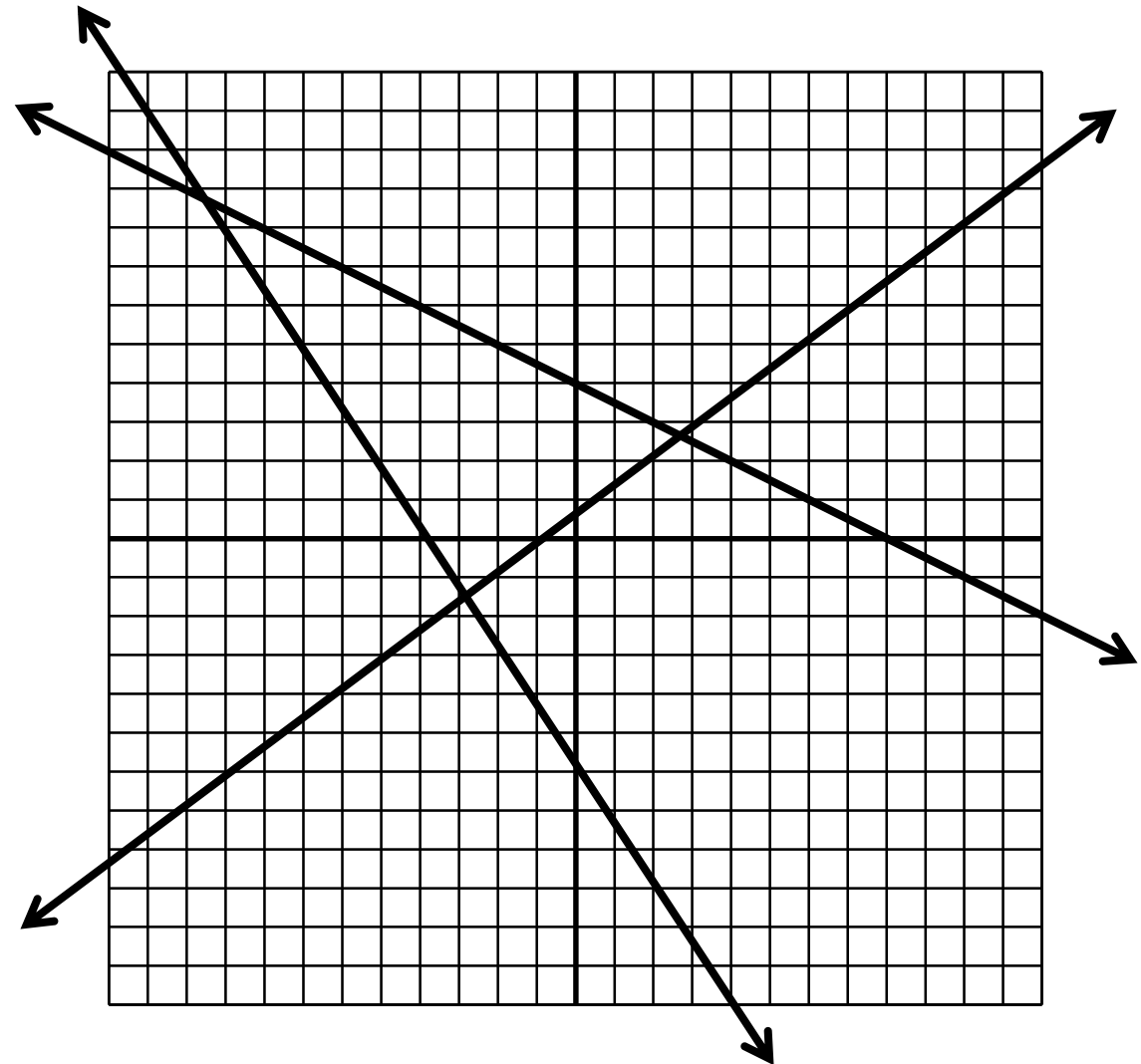**Parent Function Pre-Test**

You will take a Parent Function Pre-Test. This will count as a completed assignment (10 out of 10 points) as long as you put your name on the pre-test. It doesn't matter how many you get right or wrong.

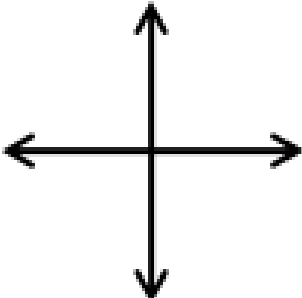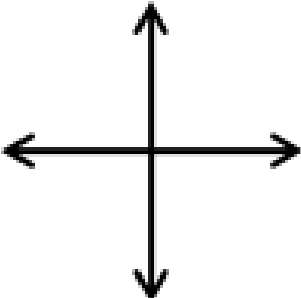**Today, you will graph the 3 different types of linear functions.**

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

$$y + 5 = -\frac{3}{2}(x - 1)$$

$$5x + 2y = 14$$

Parent Functions:

The basic form of a family of functions

PARENT FUNCTION		
FUNCTION (EQUATION)		
GRAPH		
DOMAIN: SET NOTATION		
RANGE: SET NOTATION		
DOMAIN: INTERVAL NOTATION		
RANGE: INTERVAL NOTATION		

Slope-Intercept Form

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

1. Point: $(0, -1)$

2. Slope: $-\dfrac{1 \leftarrow U\,\&\,D}{3 \leftarrow L\,\&\,R}$

Negative slope:

Up 1 and Left 3

Down 1 and Right 3
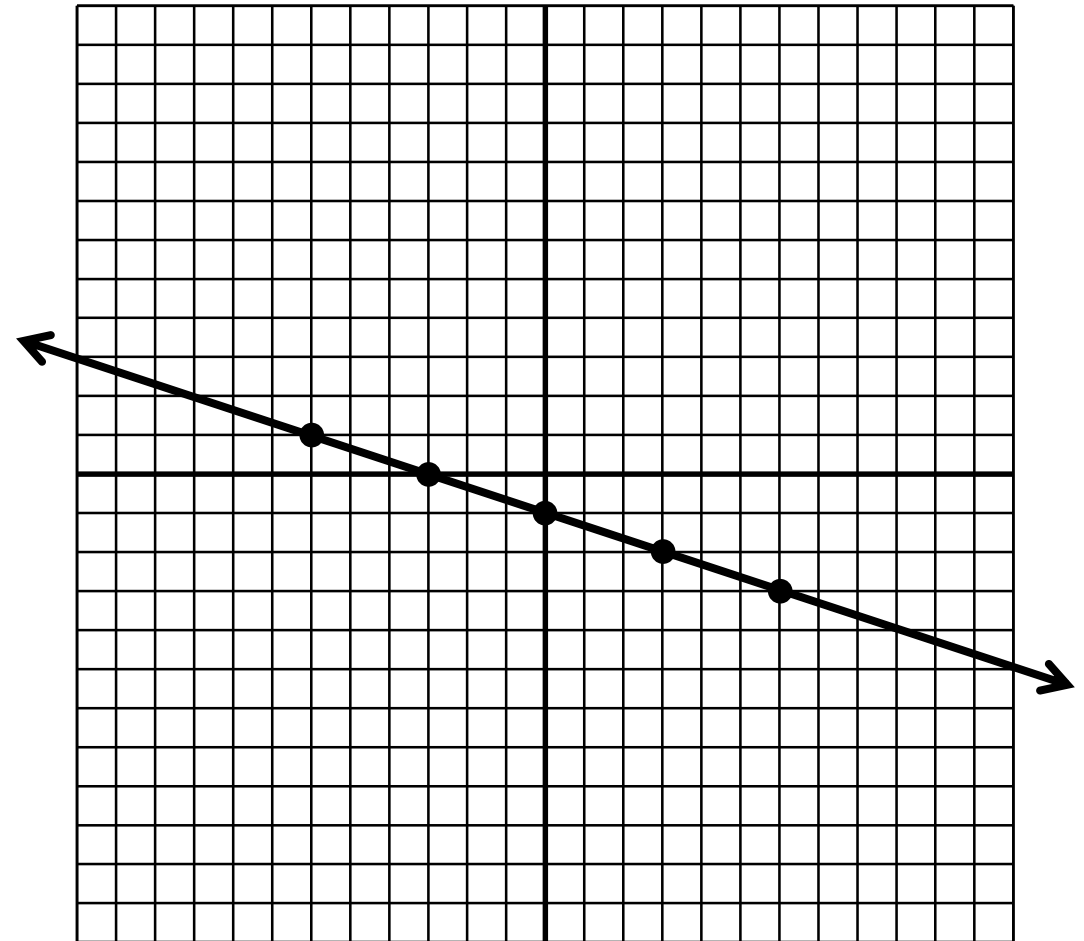
Slope-Intercept Form

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

1. **Point:** $(0, 2)$

2. **Slope:** $\dfrac{3}{4}$ $\leftarrow$ **U & D**

               $\leftarrow$ **L & R**

Positive slope:

     Up 3 and Right 4

     Down 3 and Left 4
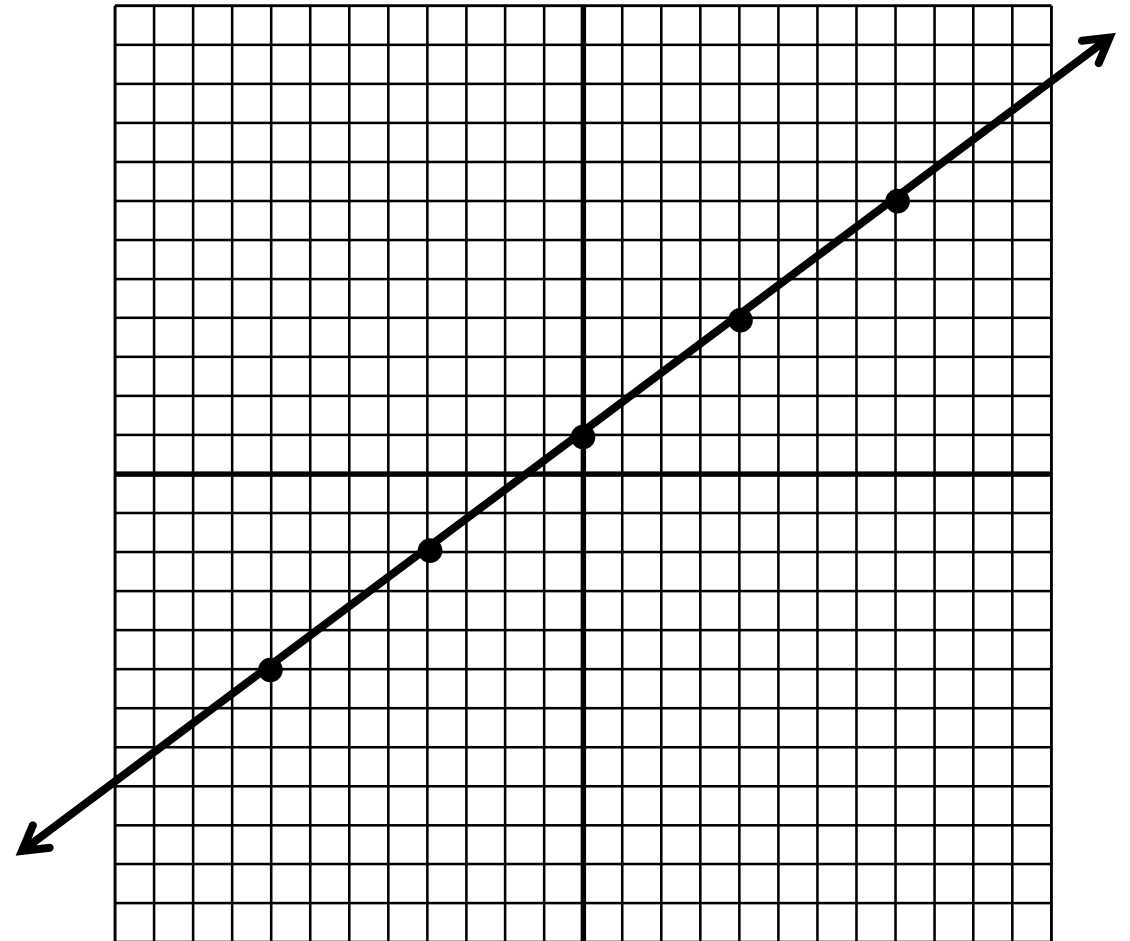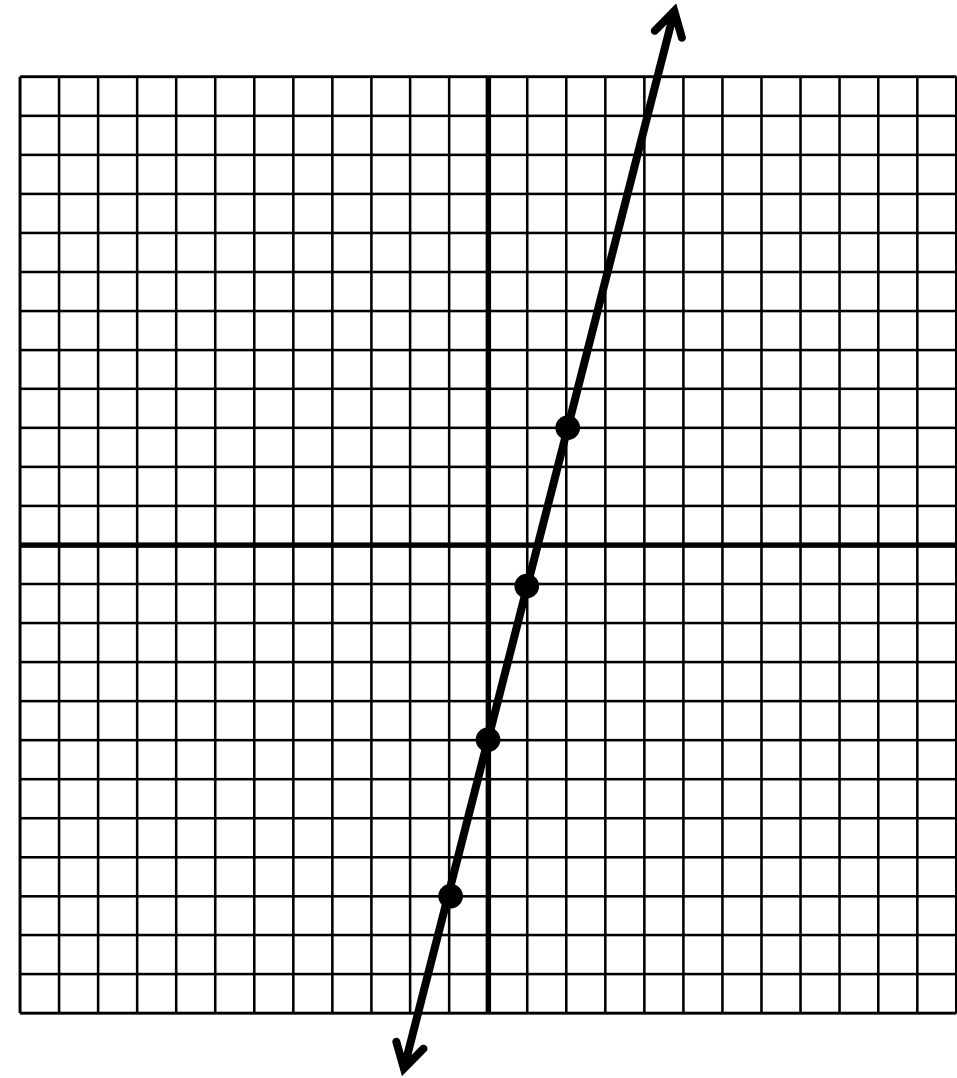
Slope-Intercept Form

$$y = 4x - 5$$

1. Point: $(0, -5)$

2. Slope: $\dfrac{4 \; \leftarrow \textbf{U \& D}}{1 \; \leftarrow \textbf{L \& R}}$

Positive slope:

Up 4 and Right 1

Down 4 and Left 1

If a point is off the graph, don't graph it.

Point-Slope Form
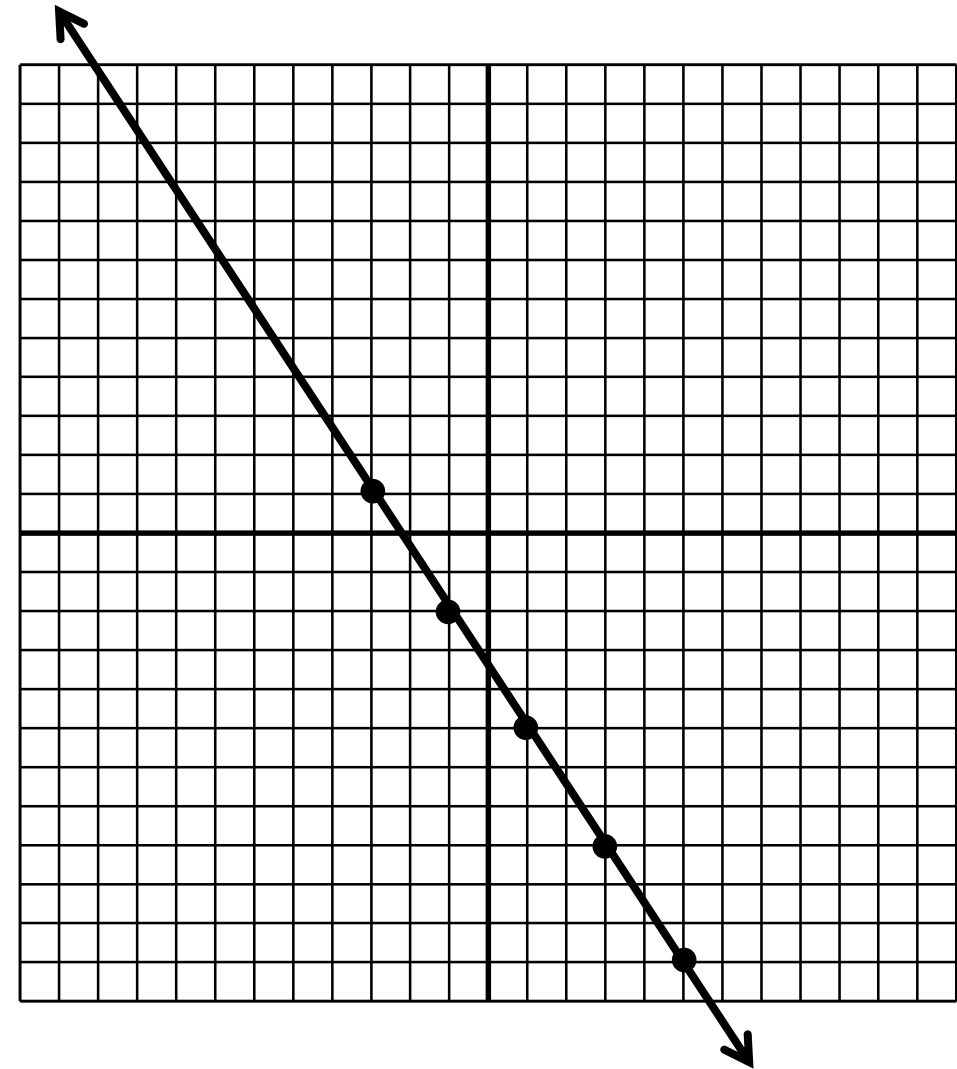
$$y + 5 = -\frac{3}{2}(x - 1)$$

1. Point: $(1, -5)$

2. Slope: $-\dfrac{3 \;\;\leftarrow U\,\&\,D}{2 \;\;\leftarrow L\,\&\,R}$

Negative slope:

   Up 3 and Left 2

   Down 3 and Right 2

Point-Slope Form

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

1. Point: $(-4, 4)$

2. Slope: $\dfrac{2}{5}$ $\leftarrow$ **U & D**

    $\leftarrow$ **L & R**

Positive slope:

Up 2 and Right 5

Down 3 and Left 5

Point-Slope Form

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

1. Point: $(0, -3)$

2. Slope: $-\dfrac{1}{2}$ $\leftarrow$ **U & D** $\leftarrow$ **L & R**
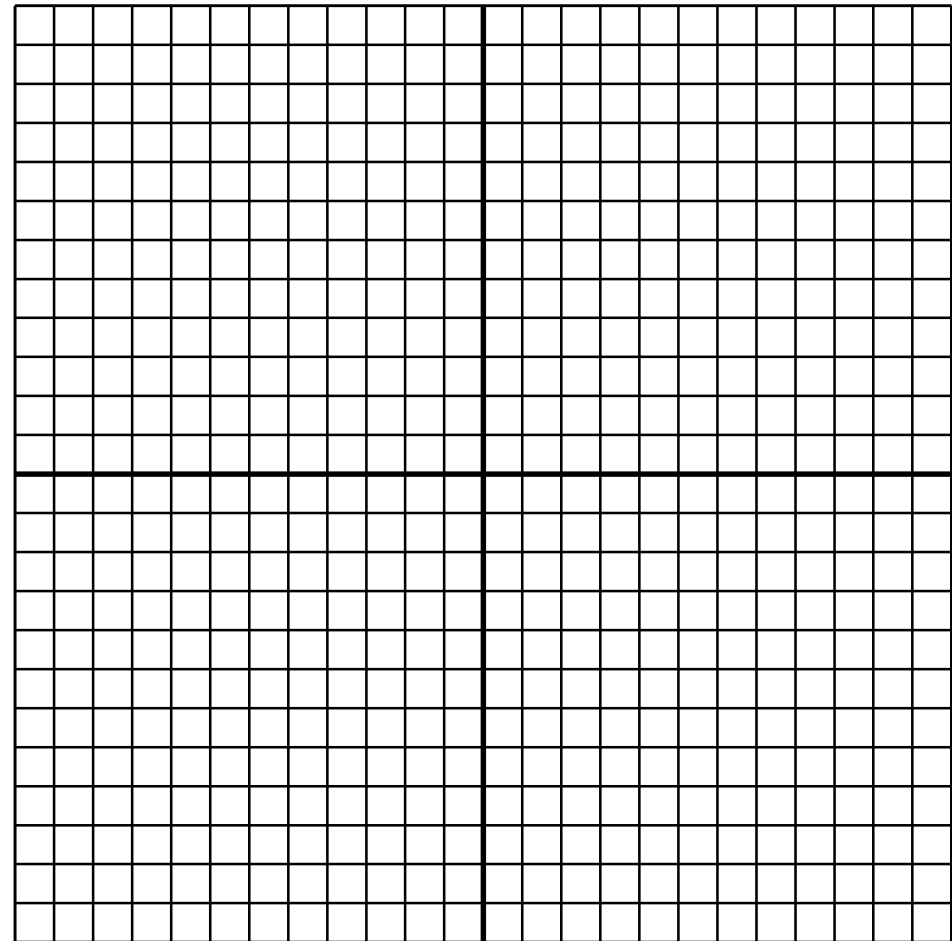
Negative slope:

Up 1 and Left 2

Down 1 and Right 2
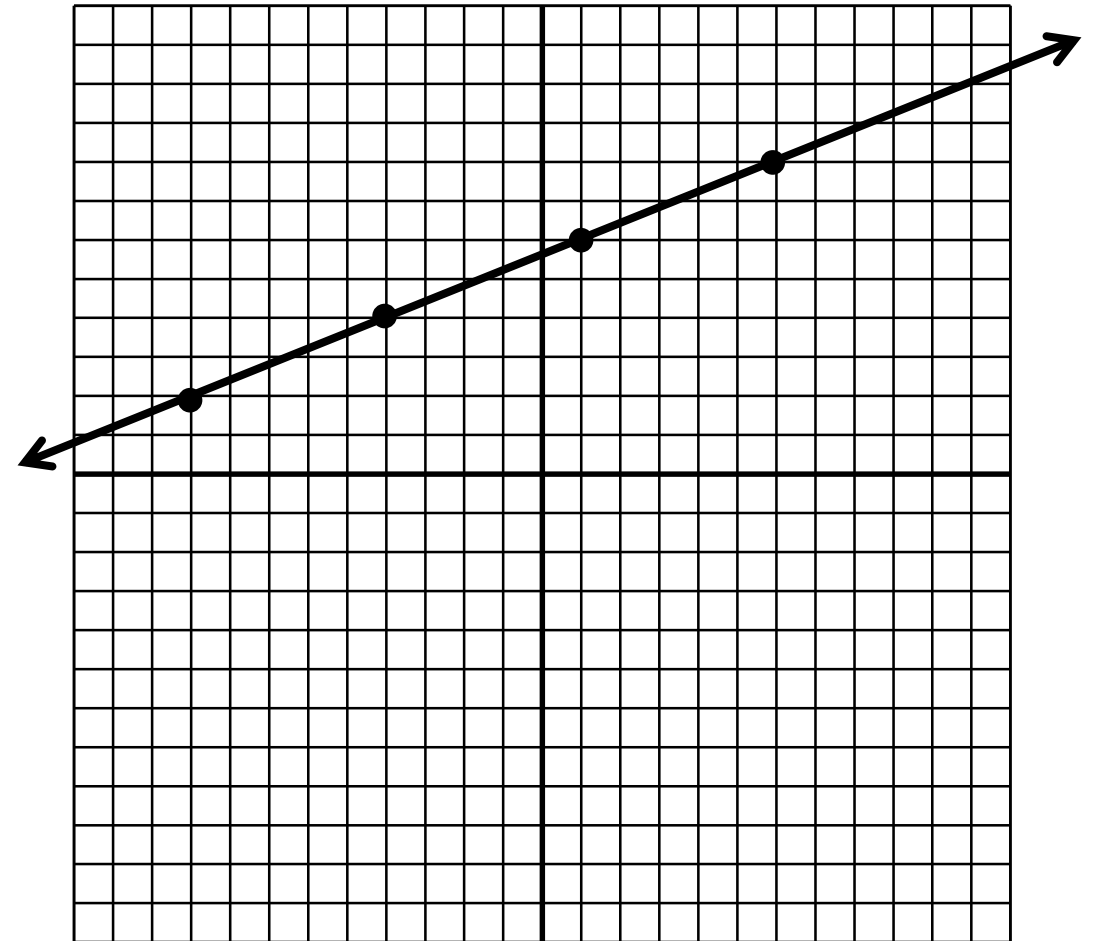
Standard Form

$$4x - 3y = 12$$

$$Ax + By = C$$

Point: $\left(\dfrac{C}{A}, 0\right)$ or $\left(0, \dfrac{C}{B}\right)$
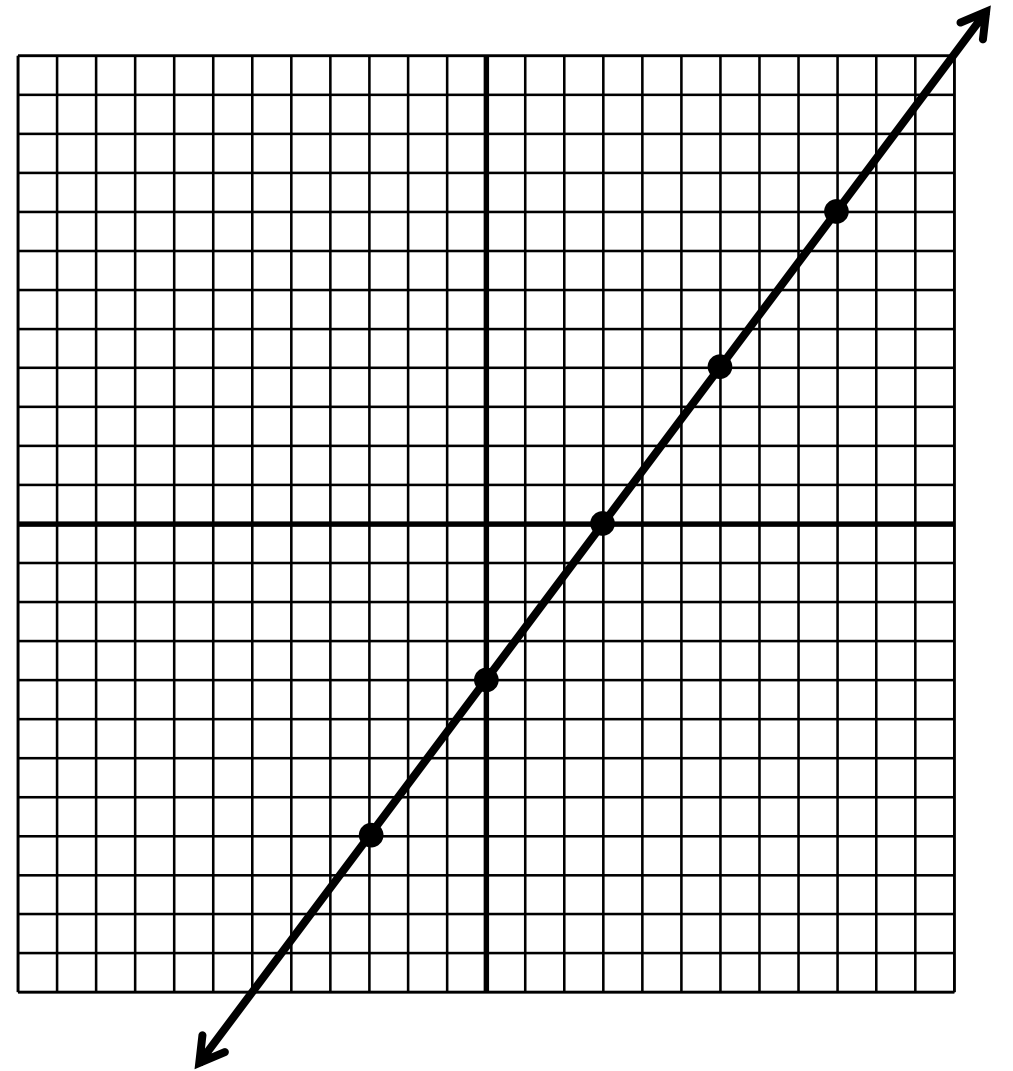
Slope: $-\dfrac{A}{B}$

Standard Form

$$4x - 3y = 12$$

1. Point: $(\dfrac{12}{4}, 0) = (3, 0)$

   or $(0, \dfrac{12}{-3}) = (0, -4)$

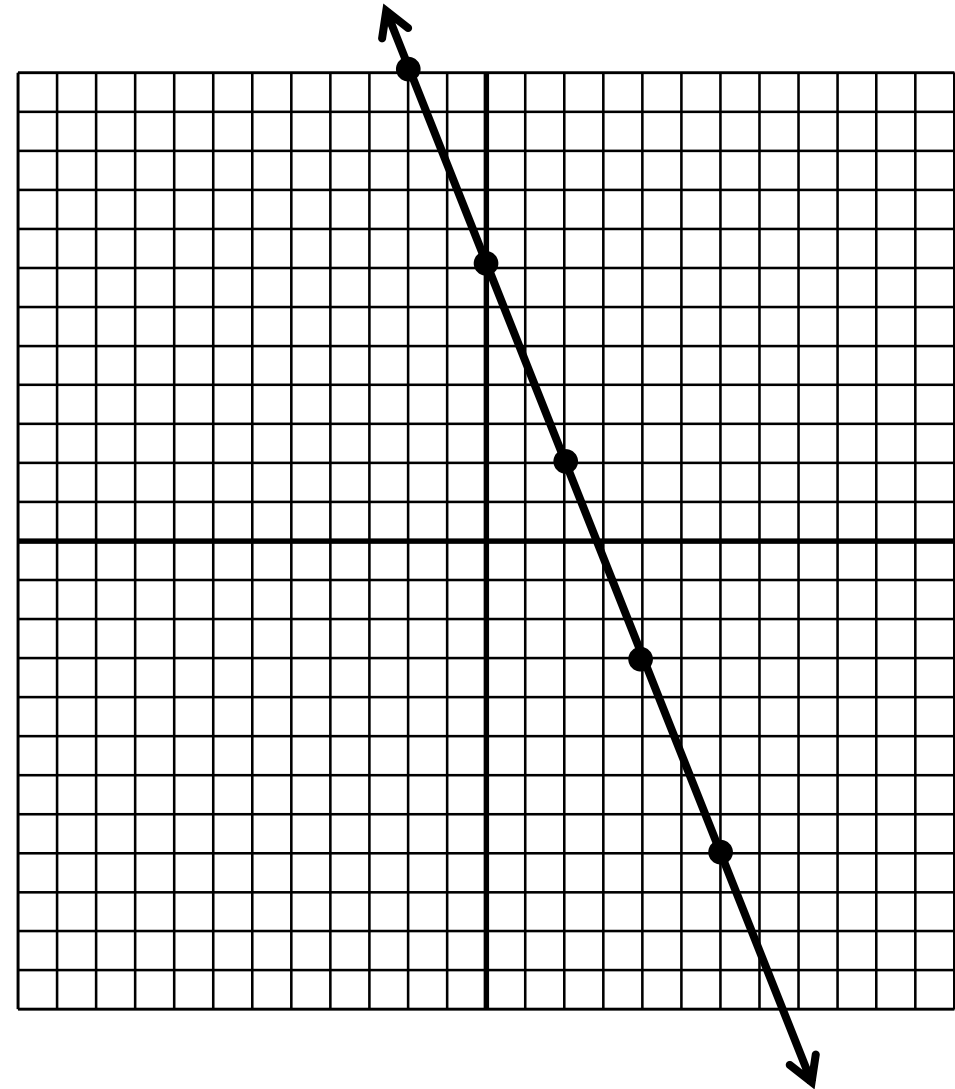2. Slope: $-\dfrac{A}{B} = -\dfrac{4}{-3} = \dfrac{4}{3}$

Standard Form

$$5x + 2y = 14$$

1. Point: $(\dfrac{14}{5}, 0) = (2.8, 0)$

   or $(0, \dfrac{14}{2}) = (0, 7)$
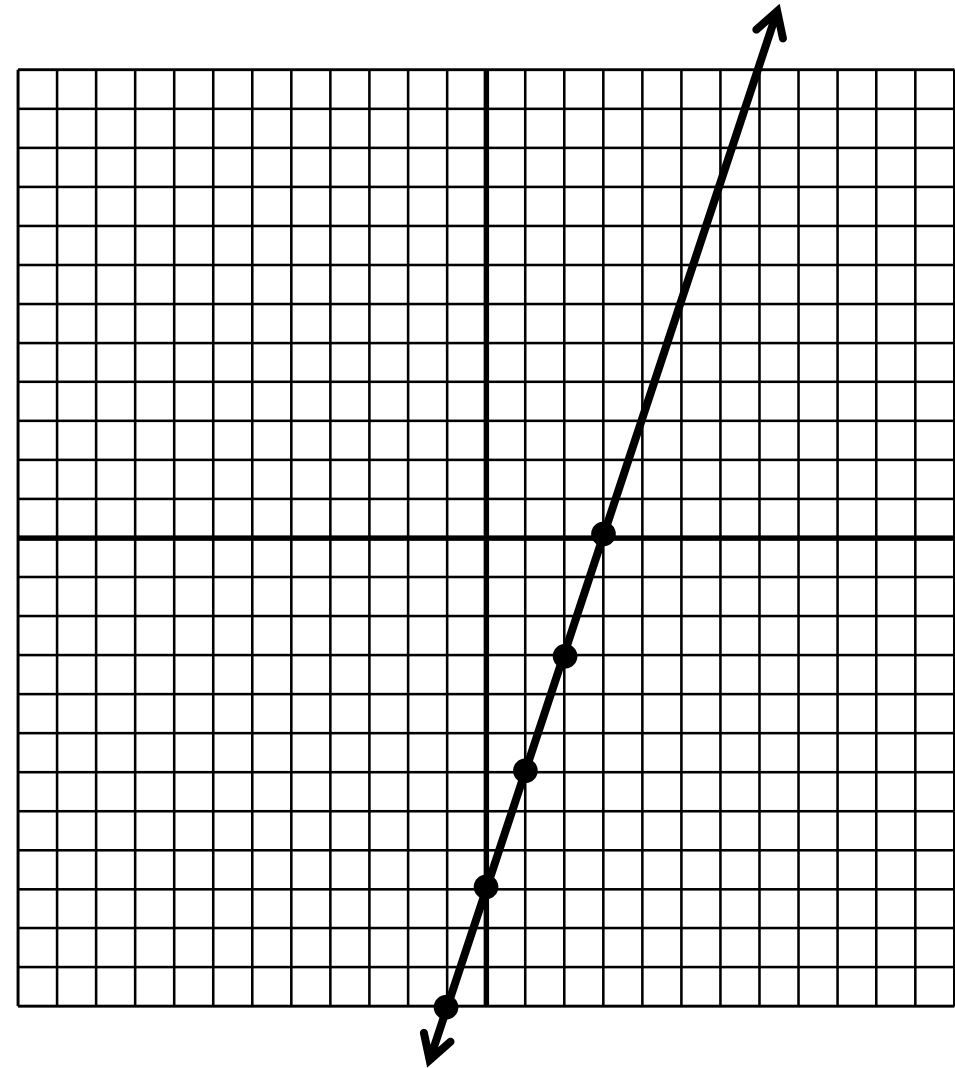
2. Slope: $-\dfrac{A}{B} = -\dfrac{5}{2}$

Standard Form

$$3x - y = 9$$

1. **Point:** $(\dfrac{9}{3}, 0) = (3, 0)$
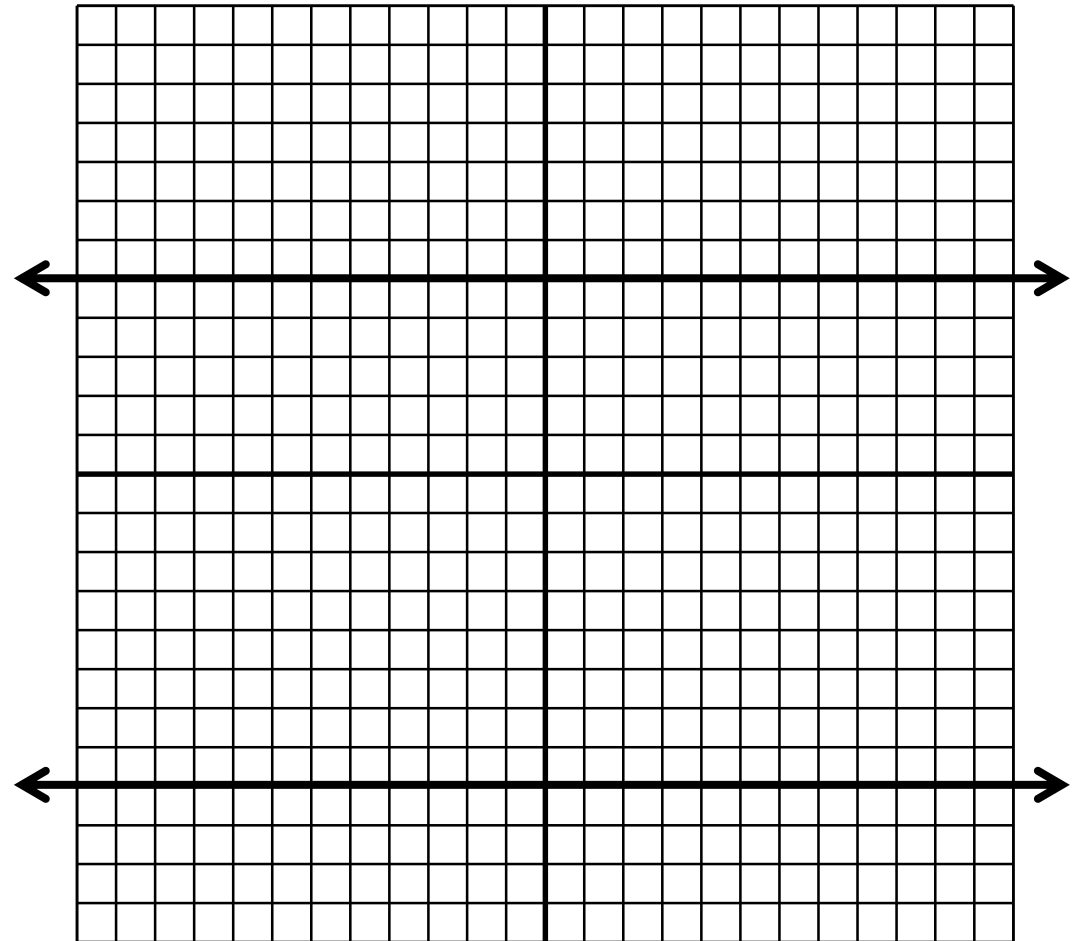
   or $(0, \dfrac{9}{-1}) = (0, -9)$

2. **Slope:** $-\dfrac{A}{B} = -\dfrac{3}{-1} = \dfrac{3}{1}$
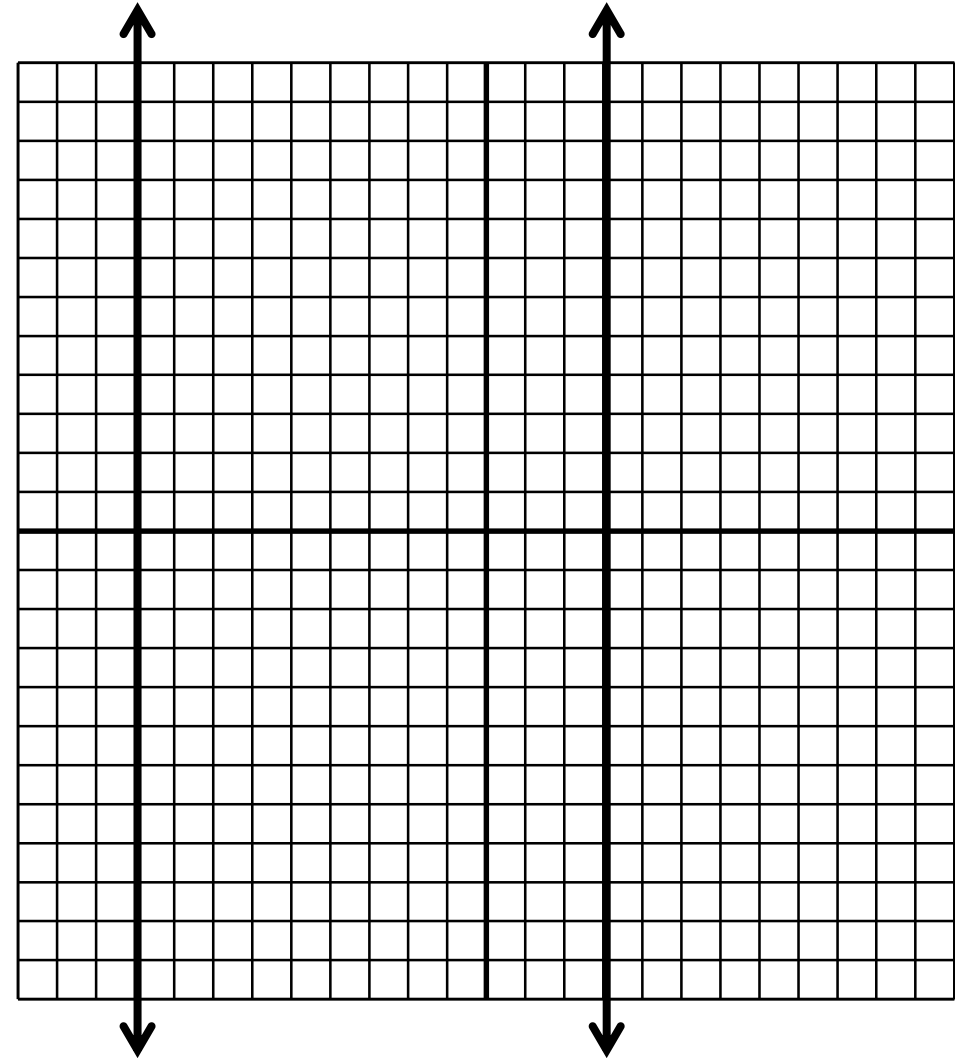
$$y = 5$$

Horizontal Line

$$y = -8$$

$x = 3$

Vertical Line

$x = -9$

Assignment:

Graphing Linear Functions Worksheet