Name: _____ Date: _____

Learning Goal 6.2	Constructing and using the following forms of a linear equation: • Slope – Intercept Form $y = mx + b$, • Slope – Point Form $y - y_1 = m(x - x_1)$, and • General Form $Ax + By + C = 0$.

Warmup

1. Use the slope formula to find the slope of the line through each of the following pairs of points.

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

a. $M\ (-22, 56)$ and $N\ (5, 17)$

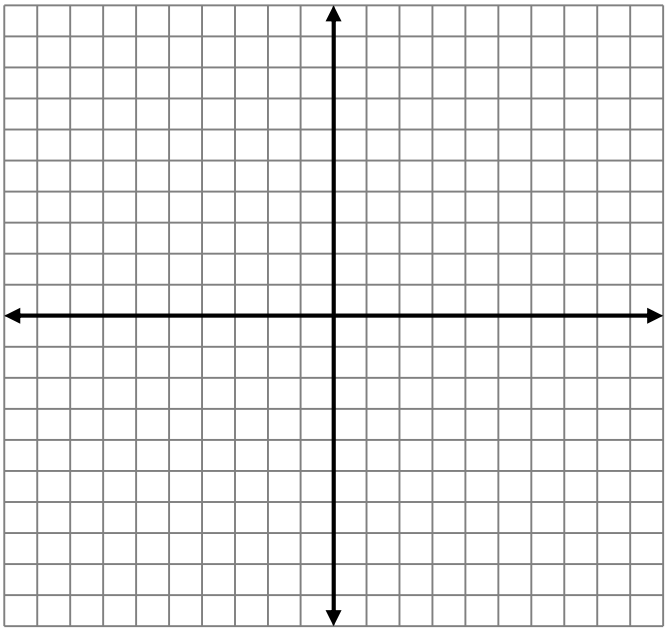
b. $R\ (8, 2)$ and $S\ (-5, -12)$

2. Find the slope of a line that is parallel to the line through MN. _____

3. Find the slope of a line that is perpendicular to the line through RS. _____

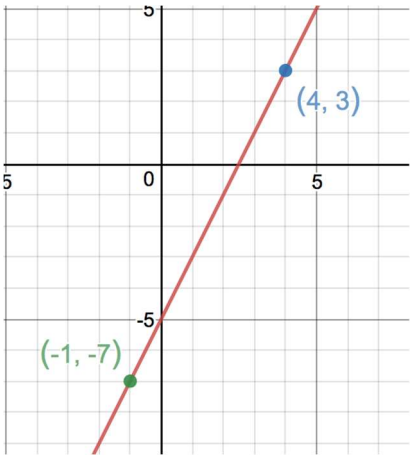
Developing Slope-Point Form

Draw a line though $(-6, -5)$ which has a slope of $\frac{3}{2}$

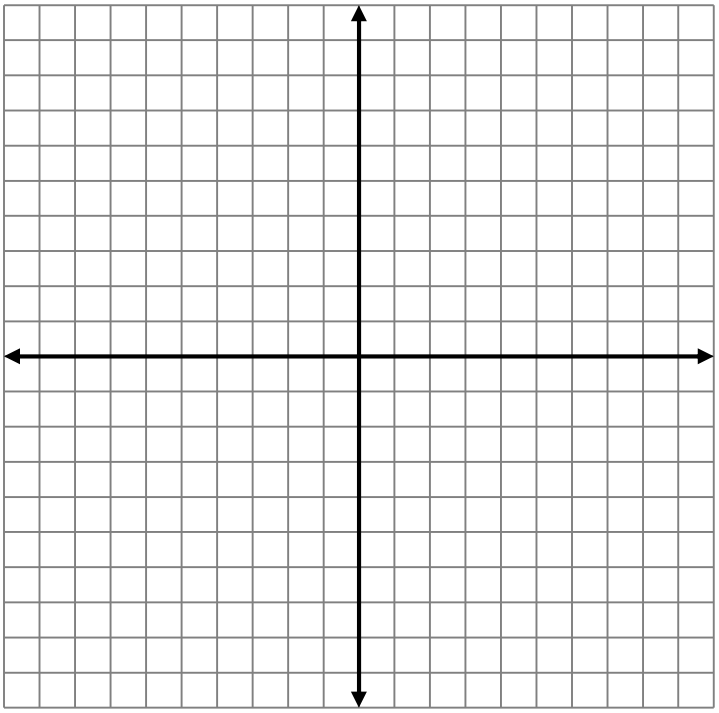


Equation of a line in Slope-Point Form

Example Write the equation of the line on the graph in slope point form. Convert your equation to slope intercept form.



Example Describe the graph the linear relation given by the equation: $y - 1 = \frac{1}{2}(x + 4)$ then graph the equation.



Write the equation of this line in slope-intercept form:

Find the x-intercept and y-intercept of the line.

Example A line passes through the points (50, 80) and (3, -14). Find the equation of the line. Convert your equation to slope intercept form.

Example Find the equation of a line that passes through (8, 15) and is perpendicular to

$$y = \frac{4}{3}x - 6.$$

Convert your equation in slope-intercept form.

Example Find the equation of a line that passes through (-6, -2) and is parallel to

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

Convert your equation in slope-intercept form.