

## Slope-Intercept Form Guided Notes

### Slope-Intercept Form

The slope-intercept form of a linear equation (or a line) is:

$$y = mx + b$$

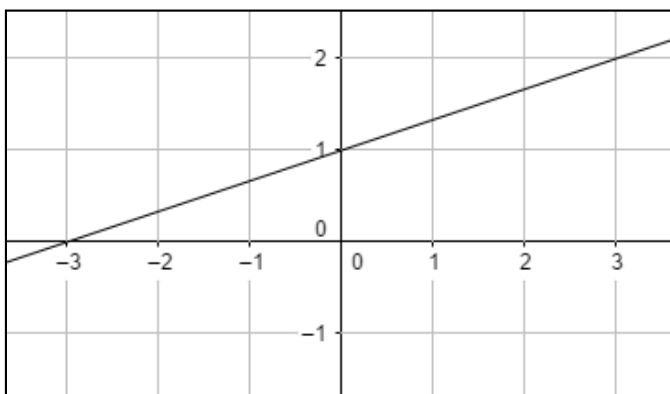
Where:

$m$  = Slope of the line

$b$  = y-intercept (y-coordinate of the point where the line crosses the y-axis)

**Problem 1:** What are the slope and y-intercept of the graph of  $y = -4x - 5$ ?

**Problem 2:** Write an equation in slope-intercept form for the line given below.



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Solution:

### Slope-Intercept Form Given Two Points

If we are given two points on a line, we can write its slope-intercept form by doing the following steps:

- Find slope using the slope formula:

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

- Find the y-intercept by putting any of the two points in the formula  $y = mx + b$  and solve for  $b$ .
- Write the final equation using  $m$  and  $b$  found in above steps.

**Problem 3:** Write an equation in slope-intercept form for the line passing through the points  $(1, -3)$  and  $(3, 1)$ .