

## Exercise 64

For the following exercises, for each pair of points, a. find the slope of the line passing through the points and b. indicate whether the line is increasing, decreasing, horizontal, or vertical.

$$(1, 9) \quad \text{and} \quad (-8, 5)$$

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### Solution

The formula for the slope of the line between two points,  $(x_1, y_1)$  and  $(x_2, y_2)$ , is

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

For the given points, then,

$$m = \frac{5 - 9}{-8 - 1} = \frac{-4}{-9} = \frac{4}{9}.$$

Since  $m$  is positive, the line is increasing.