

Chapter 1

Functions and Graphs

Exercise Solution

Exercise 1.1.59

Instruction

For the line that passes through the pair of points $(-2, 4), (1, 1)$.

- (a) Find the slope of the line.
- (b) Indicate whether the line is increasing, decreasing, horizontal, or vertical.

Solution

- (a) The slope of the line through two points $(x_1, y_1), (x_2, y_2)$ is given by,

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

We substitute the given points to get the slope,

$$m = \frac{1 - 4}{1 - (-2)} = \frac{-3}{1 + 2} = \frac{-3}{3} = -1.$$

- (b) Since the slope is negative (-1), the line is decreasing.

Answer

- (a) -1 .
- (b) Decreasing.