

Lesson 2: Properties of Linear Functions

Are You Ready? Possible Solutions

1. A linear relation is a relation whose graph is a straight line.
2. a. The student can solve for the slope of the graph by taking two points on the line: (3, -2) and (0, 1). Use the slope relationship.

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{-2 - 1}{3 - 0} \\ &= \frac{-3}{3} \\ &= -1 \end{aligned}$$

- b. The graph crosses the x-axis at 1, and the ordered pair is (1, 0).
- c. The graph crosses the y-axis at 1, and the ordered pair is (0, 1).
3. a. The domain is the set of all values of the independent variable for a particular relation.
- b. The range is the set of all values of the dependent variable for a particular relation.
4. Possible solutions include the following.
 - a. domain: {1, 2, 9}; range: {3, 5, 6}
 - b. domain: {-3, -1, 0}; range: {2, 5, 8}

Note: The order of the values does not matter, but the convention is to list the values in ascending numerical order.

- c. domain: $\{x|x \leq 10, x \in \mathbb{R}\}$; range: $\{y|y \in \mathbb{R}\}$