



Student Study Guide

5.1 Linear Functions and Graphs

Objectives

- Determine whether a relation is a function.
- Describe the domain and range of a function.

Glossary Terms

domain function
range relation

Rules and Properties

Definition of a Function

A function is a pairing between two sets of numbers in which each element of the first set is paired with exactly one element of the second set.

Key Skills

Determine whether a given relation is a function.

Determine whether the set of ordered pairs below is a function.

$(2, 7), (5, 8), (3, 9), (2, 10), (4, 11)$

The ordered pairs $(2, 7)$ and $(2, 10)$ have the same first coordinate. This is not a function.

Describe the domain and range of the following relation.

$(-2, 5), (-1, 2), (0, 1), (1, 2), (2, 5)$

The domain of the relation above is $\{-2, -1, 0, 1, 2\}$. The range is $\{1, 2, 5\}$.

Exercises

Determine whether each relation is a function.

1. $(12, 7), (6, 5), (12, -7), (6, -5)$ _____
2. $(6, 26), (5, 15), (4, 6), (3, -1), (2, -6)$ _____
3. $(1, 3), (2, 3), (4, 3), (5, 3), (6, 3)$ _____
4. $(3, 1), (3, 2), (3, 3), (3, 4), (3, 5)$ _____

Describe the domain and range of each relation.

5. $(2, 9), (3, 10), (5, 12), (9, 14)$ _____
6. $(-5, 5), (-4, 4), (-3, 3), (2, 2)$ _____
7. $(0, 17), (7, -12), (13, 21), (18, 40)$ _____
8. $(2, 50), (3, 75), (4, 100), (5, 125)$ _____