Study Guide

Domain_Range
02/29/2012

Domain/Range

A relation is a collection of (x, y) coordinate points. For example:

$r = \{(0, 3), (1, 6), (4, 8), (7, 0)\}$

The domain of the relation is the set of x-values in the collection of coordinate points that make up the relation, and the range is the set of y-values. The domain and range of a relation are written as sets of numbers in ascending order within brackets and each number is only written once. For example:

$r = \{(0, 3), (1, 6), (4, 8), (7, 0)\}$

domain: $\{0, 1, 4, 7\}$

range: $\{0, 3, 6, 8\}$

This skill focuses on giving students practice determining the domain and range of relations.

Example 1: Find the domain of the following relation r.

$r = \{(5, -6), (3, 5), (8, -1), (2, 7)\}$

Solution: The domain is the set of all x-values of the coordinate points that make up the relation.

Answer: $\{2, 3, 5, 8\}$

Example 2: Find the range of the following relation r.

$r = \{(12, -2), (3, -4), (9, -1), (6, 8), (0, -4)\}$

Solution: The range is the set of all y-values of the coordinate points that make up the relation. NOTE: Although the - 4 is used as a y-value twice, it only needs to be written once in the range.

Answer: $\{-4, -2, -1, 8\}$

An activity that can help reinforce the concept of domain and range is to show students a collection of coordinate points and ask them to name the member of the domain of each coordinate point (x-value) and the member of the range of each coordinate point (y-value).