2.1 The Language of Sets

M. Goodroe - Quantitative Skills and Reasoning

Objectives:

1. Specify sets using both listing and set-builder notation.
2. Identify when sets are well defined.
3. Properly use set notation.
4. Find the Cardinal Number of sets.

Key Terms:

Set
Elements
Set-Builder Notation
Well Defined
Empty Set or Null Set
Universal Set
Cardinal Number
Infinite
Finite

Name:_____

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Use set notation to list all the elements of the set.

1) The integers between 4 and 8, not inclusive

2) The letters needed to spell these words:
tear, rate, rat, tea

3) {x : x is an integer between 14 and 17 inclusive}

4) The natural numbers between -3 and 1, not inclusive

Use an alternative method to express the set.

5) {x: x has bike trails}
The table shows some of the facilities available at selected State Parks in New Jersey.

	camping	hiking trails	t
Allaire	yes	yes	r
Parvin	yes	yes	y
Delaware and Raritan Canal	no	yes	y
Corson's Inlet	no	yes	y
Wharton Forest	yes	yes	y

6) {d : d is a letter in the word cat and also in the word in}

Determine whether the set is well defined or not.

7) {x : x is a tennis player who has won at Wimbledon}

8) {x : x is an expensive boat on the Great Lakes}

Replace the # with either ∈ or ∉ to express a true statement.

9) 88 # {8, 16, 24, 32, ... }

10) Ohio # {California, Vermont, Colorado, New Jersey, Washington, Kentucky}

Find n(A) for the set.

11) A = {0, 2, 4, 6, 8}

12) A = {-9, -8, -7, . . ., 0}

13) A = {{∅}, {0}, {∅, 0}}

Identify the set as finite or infinite.

14) The set of even whole numbers less than 50

15) {x : x is a fraction between 5 and 6}

16) The set of stars in the Milky Way Galaxy at 12:00 A.M. on August 20, 2018