# 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 <u>Cardinal Number</u> 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) {d : d is a letter in the word cat and also in the word in}

**Determine whether the set is well defined or not.**

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

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

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

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

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

**Find n(A) for the set.**

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

11) A = {–9, –8, –7, . . ., 0}

12) A = {{∅}, {0}, {∅, 0}}

**Identify the set as finite or infinite.**

13) The set of even whole numbers less than 50

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

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