Sets of Numbers

A **set** is a collection of objects called **elements** surrounded by braces (e.g., $\{a,b,c\}$).

Common sets of real numbers:

- *Natural Numbers* (*or Counting Numbers*) { 1, 2, 3, … }
- *Whole Numbers* { 0, 1, 2, 3, … }
- *Integers* { …, –3, –2, –1, 0, 1, 2, 3, … }
- *Rational Numbers*

  - can be expressed as a ratio of two integers $\frac{a}{b}$, where $b \neq 0$.

    Examples: _____

  - can be expressed as terminating or repeating decimals.

    Examples: _____

- *Irrational Numbers*

  - cannot be expressed as a ratio of two integers.

    Examples: _____

  - can be expressed as non-terminating and non-repeating decimals.

    Examples: _____

The set of *Real Numbers* consists of all the rational numbers and all the irrational numbers.

Check every set to which each number belongs.

Number	Natural	Whole	Integer	Rational	Irrational	Not a real number
–25						
$\frac{1}{25}$						
$\sqrt{25}$						
$\sqrt{-25}$						
0.25						
0.2525…						
0.12345…						
$\sqrt[3]{25}$						