Lesson 1.1: Real Numbers and Number Operations

The Real Number System

Rational Numbers:	Irrational Numbers:
Integers:	
Whole Numbers:	
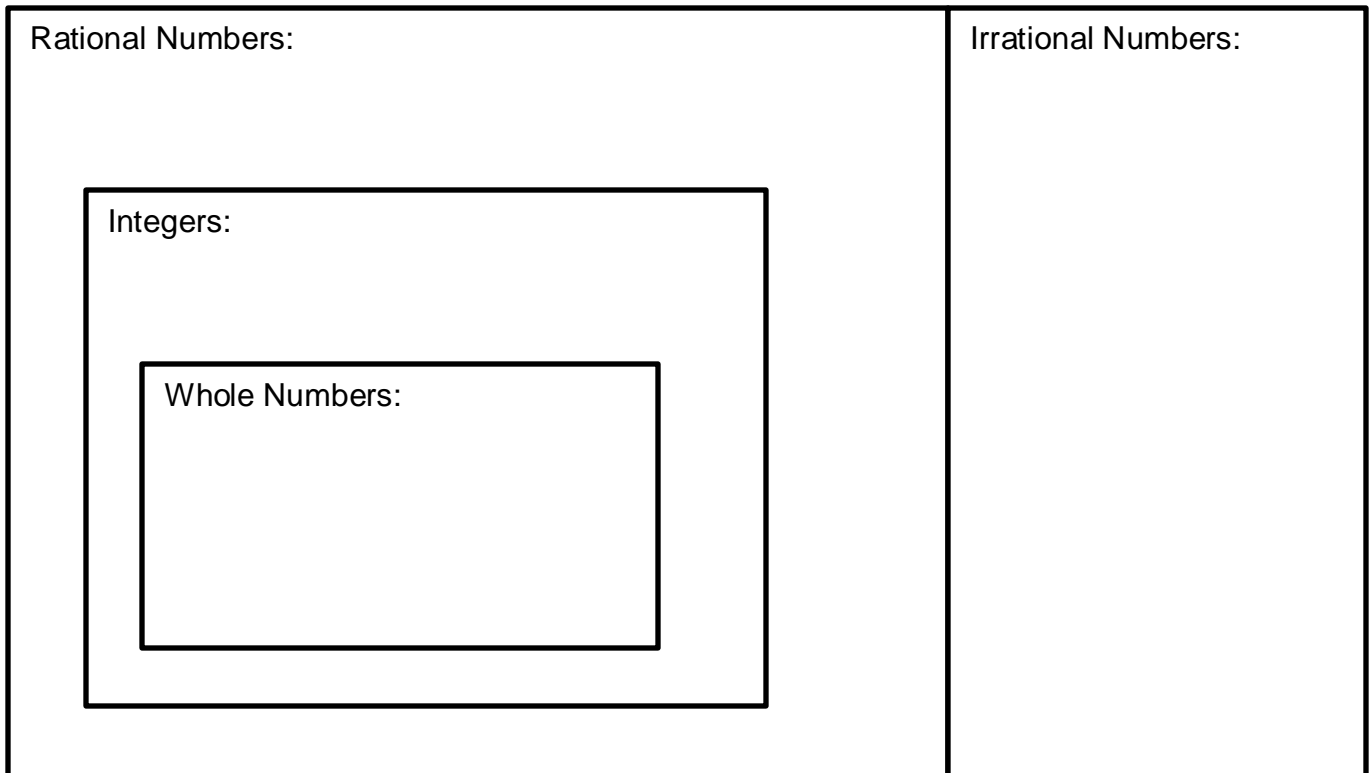
Rational: number that can be written as a fraction or decimal that ruminates or repeats

Integer: positive and negative whole numbers including 0

Whole Number:

Natural Number:

Irrational: real numbers that are **not** rational; decimal does not repeat or terminate

Example 1: Place each number in the correct region of the diagram:

293 -47 $\dfrac{5}{9}$ 0.184 $\dfrac{6}{3}$

$\sqrt{7}$ -0.42 π $-\dfrac{7}{1}$ $-\sqrt{9}$ $4\dfrac{2}{3}$

In between any two real numbers there are an infinite number of numbers.
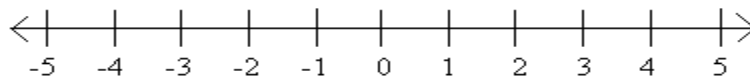
Is zero +/-/neither?

Is zero odd or even?

Origin: center, starting point labeled 0 on a number line

Graph: the point on a number line that corresponds to a real number

Coordinate: the number that corresponds to a point on the number line

Example 2: Graph the following numbers on the number line: $-\frac{4}{3}, \quad \sqrt{2}, \quad 2.7$

What statements can you create using < and > signs?

Properties of Addition & Multiplication

Given a, b, and c are real numbers

Property	Addition	Multiplication
Commutative		
Associative		
Identity		
Inverse		
Distributive		

Opposite: additive inverse (3 and -3)   * Subtraction is adding the opposite

Reciprocal: Multiplicative inverse ($\frac{2}{3}$ and $\frac{3}{2}$)   *Dividing fractions is multiplying by reciprocal

Example 3: Identify the property shown.

   a. $(3 + 9) + 8 = 3 + (9 + 8)$ **b.** $14 \cdot 1 = 14$

   _____   _____

Example 4: Give an example of the commutative property.