Course: Algebra 1 (02052) WA Alg1A

Unit: 1. FOUNDATIONS OF ALGEBRA

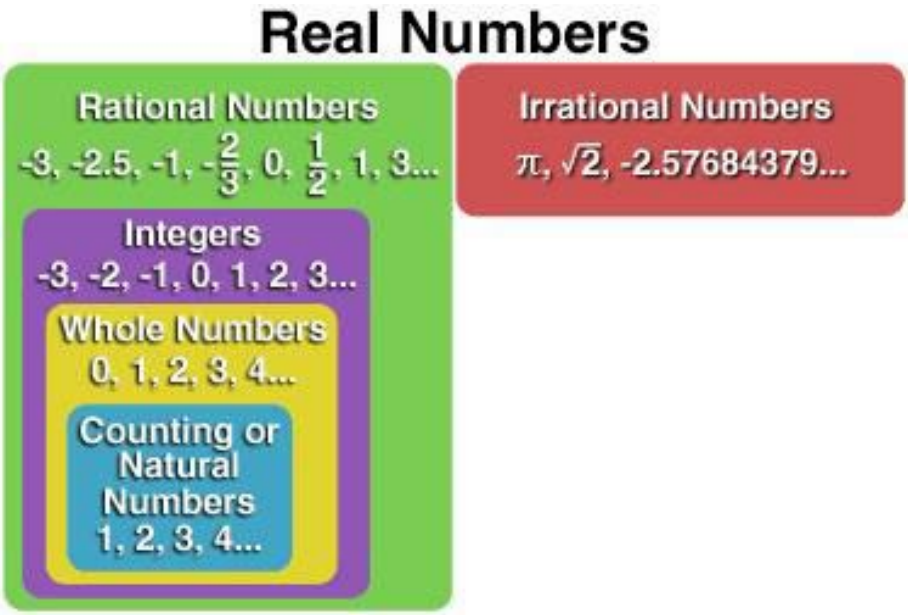
Assignment: 5. Classifying and Comparing Number

CLASSIFYING AND COMPARING NUMBERS

Vocabulary

	Definition	**Example/Illustration**
Additive inverse		
Integer		
Irrational number		
Natural number		
Rational number		
Whole number		

SETS OF NUMBERS



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INTEGERS AND RATIONAL NUMBERS

The *opposite* is the negative version of a number. What are the opposites of these numbers?

- 1 → _____
- -2 → _____
- 3 → _____

These are also called the additive _____. If you add a number with its opposite (the additive inverse), then the sum is _____.

What are four ways to read this number? -5

- _____ five
- _____ five
- The _____ of five
- The _____ _____ of five

Rational Numbers

- Can be written as a ratio of two integers in the form 
- B (the bottom) cannot equal _____
- These can be expressed easily as either _____ or fractions

In other words, rational numbers include all real numbers *except* decimals that DO NOT end or repeat.

OPERATIONS WITH RATIONAL AND IRRATIONAL NUMBERS

When you add, subtract, multiply, and divide:

- Two rational numbers = _____ number
- An irrational and rational number = _____ number (except if the rational number is 0, then it's rational)
- Two irrational numbers = can be _____ or _____ number

Make sure you **simplify any numbers to double-check if they are rational.

**If you have two irrational numbers, double check if the irrational parts cancel out

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THE NUMBER LINE

- A **point** is graphed on a number line by a heavy _____
- To show a **continuation of point**s, enlarged _____ are used at the ends of the line.
- Integers have a _____ (+/-), so numbers on the _____ side are bigger than numbers on the _____ side
- Numbers less than 0 (a < 0) are _____
- Numbers bigger than 0 (a > 0) are _____
- You can graph infinitely many integers and non-integers on a number line

A < B means that A is to the _____of B on the number line.

A < B is the order of A and B.

Graph A and B on the number line:

Key things to remember about the real number system:

- Every real number is either _____ or _____.
- As decimals, rational numbers _____ or _____.
- Irrational numbers never _____ and never _____.
- Rational numbers can be graphed as _____ on a number line.
- Numbers to the left of the number line are _____ than the numbers to the right.

HINT: to change ALL fractions to decimals to compare them, treat the “fraction” line as a division line. In other words $\frac{5}{6}$ is the same as 5 ÷ 6, or .83333333… (repeating).