Lesson 07: Inequality, Other Numbers, Review

Inequality Signs, Other Numbers

Inequality Signs

Inequality signs are used to indicate the relationship of one number or value to another.

5 is **less than** 8 written $5 < 8$ | -4 is **greater than** -6 written $-4 > -6$

-2 is **less than or equal to** 3 written $-2 \leq 3$ | 25 is **greater than or equal to** 20+5 written $25 \geq (20+5)$

6 is **not equal to** 5 written $6 \neq 5$

TRY: Indicate if the following statements are true or false.

17	<	25	True or False		36	>	39	True or False			
(5 + 3)	≤	(3+5)	True or False		(14 – 6)	≥	(13 – 2)	True or False			

Use the < or > symbol to make each statement true.

(5 + 6 – 3)	_____	25		36	_____	(27 – 9 + 10)	
17	_____	(25 – 9)		36	_____	(39 – 2)	

Other Numbers

So far, three types of numbers, found on the number line have been defined:
Whole numbers, Natural numbers, and Integers. Three more types of numbers need to be defined.

DEFINITION: A **rational number** is any number of the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

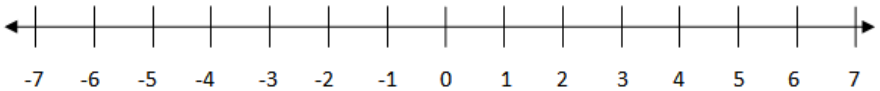
In other words, fractions such as $\frac{4}{9}$ and $\frac{13}{5}$ are rational numbers.

DEFINITION: **Irrational Numbers** are numbers that cannot be written as the quotient of two integers.
When written in decimal form, an irrational number is a nonrepeating, nonterminating decimal.

The most common irrational number one uses is *pi*, π.

Definition: The Rational and Irrational numbers form the set of **Real Numbers**.

Rational and Irrational numbers, together, compose the **Real Number Line**:



The Number line extends from negative infinity to positive infinity. The infinity symbol is: ∞.