

Bellwork

1. What is a number?
2. Can a letter represent a number?
3. Provide an example of a number that is represented by something that is not a number.

What is a Number?

Definition:

An arithmetical value, expressed by a word, symbol, or figure, representing a particular quantity and used in counting and making calculations and for showing order in a series or for identification.

Number Classifications

1. Complex Numbers
2. Real Numbers
3. Rational Numbers
4. Irrational Numbers
5. Integers
6. Whole Numbers
7. Natural Numbers

Breaking Down the Subsets

Complex Numbers:

Every number that we work with right now will be considered a complex number.

The number system is very large and at times very confusing, so in other words **COMPLEX!**

Real Numbers:

Every number that we work with right now will also be considered a real number.

Not all complex numbers are real but that will come under investigation at a later time.

Breaking Down the Subsets Continued...

Rational Numbers:

Any number that can be written as a fraction.

This includes decimals that either repeat, or terminate (come to an end).

This also includes perfect roots.

(Square roots, cube roots, etc)

Irrational Numbers:

Any number that is not a rational number.

Decimals that do not have a pattern, or terminate (Never-ending).

Non-perfect roots.

Breaking Down the Subsets Continued...

Integers:

These are the positive and negative numbers typically with no decimal point.
Think of integers as the number line!

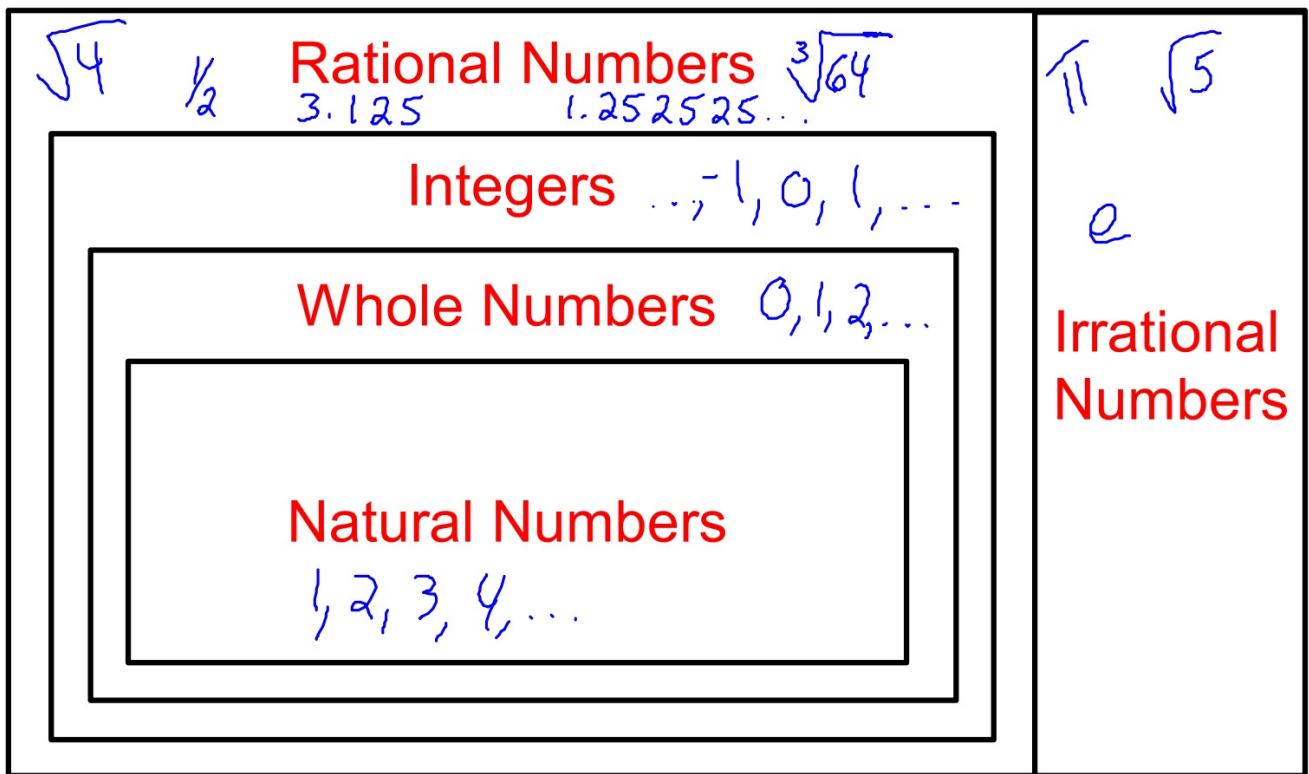
Whole Numbers:

These are the numbers that describe a quantity of something.

Natural Numbers:

Counting numbers.

Number Subsets: Graphic Organizer
Complex Numbers
Real Numbers



Using the Chart

A number is either RATIONAL or IRRATIONAL.

Find the inner most category that the number will fit into and flow outward.

If a number is Natural: Also whole, integer, rational, real, and complex

If a number is Whole: Also integer, rational, real, and complex

If a number is an Integer: Also rational, real, and complex

If a number is Rational: Also real and complex.

If a number is Irrational: Also real and complex.

Example

1. Identify 3 numbers that are Natural Numbers.

1 2 3 4 $\sqrt{4}$

2. Identify 3 numbers that are Whole Numbers.

0 1 2 378,452,612

3. Identify 3 numbers that are Integers.

1 -1 -24 40 38.0 100.00

4. Identify 3 numbers that are Rational, but not a part of the other categories above.

$\frac{1}{2}$ 1.25 -3.125

Example

5. Identify 3 numbers that are Irrational.

π e $\sqrt{5}$ $\sqrt{\pi}$

6. How many of the numbers mentioned in the first 5 examples are Real #'s? Complex #'s?

All are \mathbb{R} #'s (Real #'s)
All are also Complex.