Natural Number as Integer

Integers

An integer is a whole number (not a fractional number) that can be positive, negative, or zero. Examples of integers are: -4, 1, 9, 8, 7, and 3,043.
The set of integers, denoted ***Z***, is formally defined as follows:

Z = {...-4, -3, -2, -1, 0, 1, 2, 3, 4 ...}

Remember:

1. When we add, subtract or multiply integers, the answers are always integers.
2. Integer multiplication rule.

+A	**X**	**+B**	**+AB**
-A	**X**	**-B**	**+AB**
+A	**X**	**-B**	**-AB**
-A	**X**	**+B**	**-AB**

Natural Number as Rational Number

A rational number is any number that can be expressed as a ratio of two integers (hence the name "rational"). It can be written as a fraction in which the top number (numerator) is divided by the bottom number (denominator).

Example: $\frac{5}{3}, \frac{6}{7}, \frac{7}{8}$

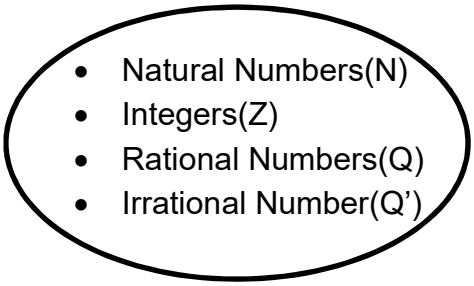
Natural Number as Irrational Number

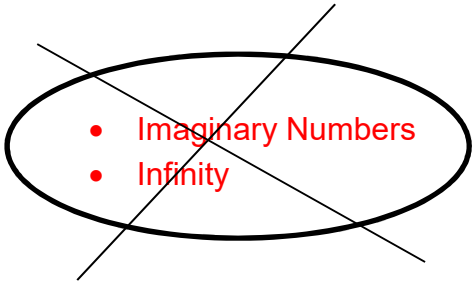
An **Irrational Number** is a real number that **cannot** be written as a simple fraction.

Example: Value of π = 3.14159……, Value of $\sqrt{2}$ = 1.41421356237….

REAL NUMBERS (R)

Any number you can think is a real number except Square root of minus number **(Imaginary Number)** and **Infinity.** Or a **real number** is a value that represents a quantity along a number line.





Imaginary Numbers

A number that is expressed in terms of the square root of a negative number (the square root of a negative number) Imaginary numbers are represented by i or j. We will discuss more about imaginary number in the coming lessons.

Example:

$$\sqrt{-1}$$

Solve and find the type of Number?

1. 8 + 10 - 12

2. 21 ÷ 7 + 5

3. 6 X (44 ÷ 6)

4. (11 -2) + (7 x 4)

5. $\sqrt{49}$ x 2 ÷ 3

Composite Number

A number that can be divided exactly by numbers, 1 or itself is called composite number.

Example: 9 can be divided exactly by 3, 1 as well as by itself means 9, another example 16 can be divided exactly by 4, 2, 8, 1 and 16.

Prime Number

A number cannot be divided exactly by numbers other than 1 or itself is called Prime Number.

Example: 7 cannot be divided exactly with numbers but it can divide by 1 or 7 another example 13 cannot be divided exactly with numbers but it can divide by 1 or 13.

Factorization

Factors of a number are numbers that divide evenly into another number.

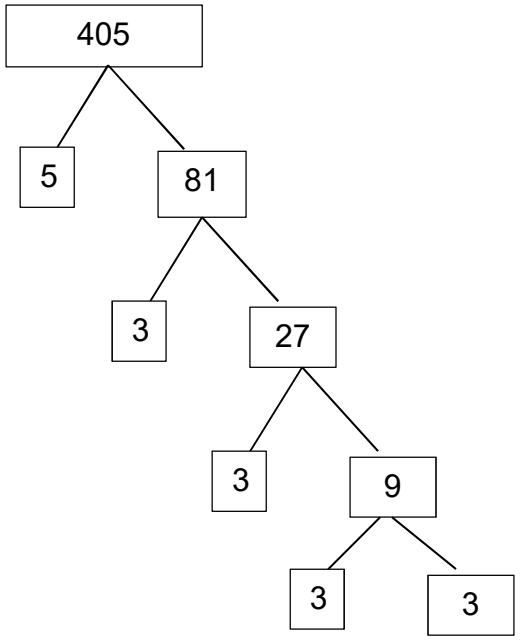
Example: Factor of 12 is 2 x 2 x 3 or 3 x 4 or 2 x 6 or 12 x 1

Prime Factor

Prime **factorization** is finding the factors of a number that are prime.

Example: Factor of 60 is 2, 2, 3, 5

Factor Tree



Ladder Method

5	**405**
3	**81**
3	**27**
3	**9**
3	**3**
	1