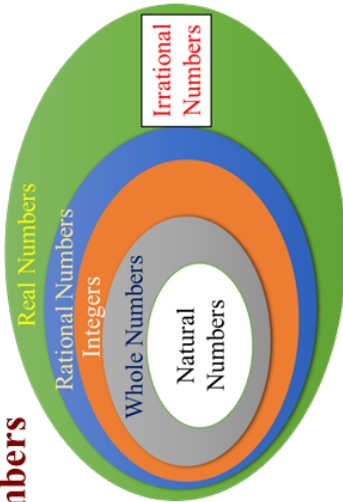
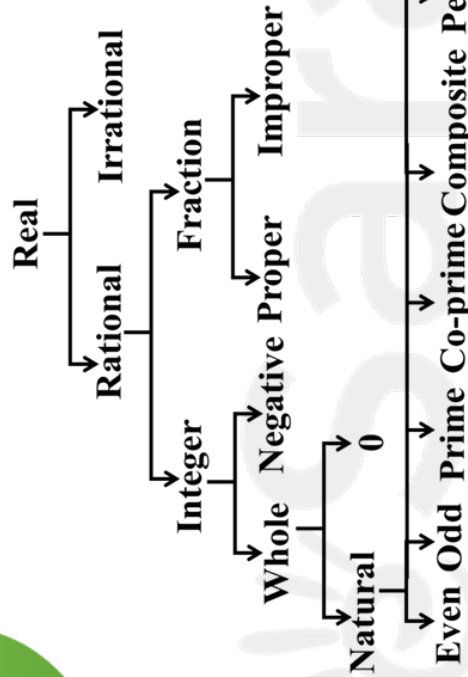


Numbers



MINDMAP

Real Numbers



Rational Numbers

If p and q are integers & $q \neq 0$

The Rational Numbers are all the numbers that can be

expressed in the form of $\frac{p}{q}$.

where p and q are integers & $q \neq 0$

Rational numbers includes:—

1. Fractions
2. Terminating Decimal Numbers
3. Non - terminating & Repeating Decimal Numbers

Irrational Number

A number is called an Irrational Number, if it cannot be written in the form $\frac{p}{q}$, where p & q are integers and $q \neq 0$.

Real Numbers

Rational numbers together with irrational numbers are said to be Real numbers. That is, a Real number is either rational or irrational.

The Fundamental Theorem of Arithmetic :

➤ Every composite number can be expressed (factorised) as a product of primes, and this factorisation is unique, apart from the order in which the prime factors occur.

➤ For any two positive integers a and b ,
 $\text{HCF}(a,b) \times \text{LCM}(a,b) = a \times b$
 (Product of two Numbers)

➤ Let x be a rational number whose decimal expansion terminates. Then we can express x in the form $\frac{p}{q}$, where p and q are coprime, and the prime factorisation of q is of the form $2^n 5^m$, where n, m are non-negative integers.

All Non-terminating & Non-repeating decimal numbers are Irrational numbers.

E.g. $\sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{7}, \pi,$

0. 12342678954253419 ... etc.