1.1 Introduction

Introduction to Natural Numbers

Non-negative counting numbers excluding zero are called **Natural Numbers**.

N = 1, 2, 3, 4, 5, ……….

Whole Numbers

All-natural numbers including zero are called **Whole Numbers**.

W = 0, 1, 2, 3, 4, 5, …………….

Integers

All-natural numbers, negative numbers and 0, together are called **Integers**.

Z = $-$ 3, $-$ 2, $-$ 1, 0, 1, 2, 3, 4, ………….

Rational Numbers

The number 'a' is called **Rational** if it can be written in the form of r/s where 'r' and 's' are integers and s ≠ 0,

Q = 2/3, 3/5, etc. all are rational numbers.

How to find a rational number between two given numbers?

To find the rational number between two given numbers 'a' and 'b'.

$$\frac{a + b}{2}$$

Example:

Find 2 rational numbers between 4 and 5.

Solution:

To find the rational number between 4 and 5

$$\frac{a + b}{2} = \frac{4 + 5}{2} = \frac{9}{2}$$

To find another number we will follow the same process again.

$$\frac{1}{2}\left(4 + \frac{9}{2}\right) = \left(\frac{1}{2}\right)\frac{17}{2} = \frac{17}{4}$$

Hence the two rational numbers between 4 and 5 are 9/2 and 17/4.

Remark: There could be unlimited rational numbers between any two rational numbers.