

Exercise - I

1) Represent each of the following rational no. on number line  
 (i)  $\frac{5}{7}$       (ii)  $\frac{8}{3}$       (iii)  $\frac{23}{6}$       (iv) 1.3      (v) -2.4

2) Find a rational number between

(i)  $\frac{3}{8}$  and  $\frac{2}{5}$       (ii) 1.3 and 1.4      (iii) -1 and  $\frac{1}{2}$

(iv)  $-\frac{3}{4}$  and  $-\frac{2}{5}$       (v)  $\frac{1}{9}$  and  $\frac{2}{9}$ .

3) Find three rational numbers lying between  $\frac{3}{5}$  and  $\frac{7}{8}$

4) Find four rational numbers lying  $\frac{3}{4}$  and  $\frac{5}{7}$ .

5) Find 16 rational numbers between 2.1 and 2.2.

6) Express each of the following decimals in the form  $\frac{p}{q}$  where p, q are integers and  $q \neq 0$ .

(a)  $0.\overline{2}$       (b)  $0.\overline{53}$       (c)  $2.\overline{93}$

(d)  $18.\overline{48}$       (e)  $0.\overline{235}$       (f)  $0.00\overline{32}$

(g)  $1.3\overline{23}$

NUMBER SYSTEMS

- 1) Natural no.: Counting numbers are called natural no. as -  $\{1, 2, 3, 4, 5, 6, \dots \text{etc.}\}$ .
- 2) Whole numbers: - All natural numbers together with 0 are called whole number. its denoted by 'W'  
 $W = \{0, 1, 2, 3, 4, 5, \dots \text{etc.}\}$ .
- 3) Integers number: The ~~families~~ families of negative and whole numbers are called Integers no.  
 $Z = \{-5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, \dots \text{etc.}\}$ .
- 4) Prime numbers: the numbers which have only two factors 1 and itself are called prime no.  
 as:  $\rightarrow 2 \rightarrow \{1, 2\}$ .  $3 \rightarrow \{1, 3\}$   $5 \rightarrow \{1, 5\}$
- 5) Composite no. - The numbers which have more than two factors are called Coposite no.  
 as:  $\rightarrow 4 = \{1, 2, 4\}$ .  $6 = \{1, 2, 3, 6\}$   $8 = \{1, 2, 4, 8\}$
- 6) Even no.  $\rightarrow$  The numbers divisible by 2 are called even no.  $\{2, 4, 6, 8, \dots \text{etc.}\}$ .
- 7) Odd no.  $\rightarrow$  Those numbers can't be divisible by 2 are called odd no. as:  $\{-1, 3, 5, 7, 9, 11, \dots \text{etc.}\}$
- 8) Rational no.  $\rightarrow$  The numbers of the form  $\frac{p}{q}$ , where p and q are Integers and  $q \neq 0$ . are known as rational no.  
 as:  $\rightarrow \{\frac{1}{2}, \frac{3}{2}, \frac{1}{3}, \dots \text{etc.}\}$ .
- 9) Irrational no.  $\rightarrow$  A number which can neither be expressed as a terminating decimal nor as a repeating decimal, is called an Irrational numbers.  
 as:  $\rightarrow \sqrt{2}, \sqrt{3}, \sqrt{5}, \sqrt{6}, \sqrt{7}, \sqrt{8}, \sqrt{10}, \sqrt{11}, \dots \text{etc.}$  are all irrational no.