



Subject: Mathematics

Teacher: Deepti Bala

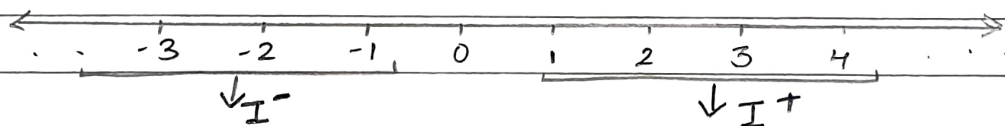
Topic: Chapter-1: Rational number

Natural numbers (N): Counting numbers. It is the collection of numbers starting from 1 to infinity
 $\{1, 2, 3, 4, \dots\}$

Whole numbers (W): All the counting numbers and including 0.
 $\{0, 1, 2, 3, 4, \dots\}$

Integers: Collection of all the +ve, -ve numbers including zero. Also denoted as I or Z.

$\{\dots -2, -1, 0, +1, +2, \dots\}$



Rational numbers: are written in the form of $\frac{p}{q}$, where $q \neq 0$

The following properties of addition in Rational numbers.

1. Closure property: If, we add two rational numbers, the result is also a rational number.

If $a \in \mathbb{Q}$, $b \in \mathbb{Q}$, then $a + b \in \mathbb{Q}$

2. Commutative property: If $a \in \mathbb{R}$ and $b \in \mathbb{R}$ then $a + b = b + a$

3. Associative property: If $a, b, c \in \mathbb{R}$ then $(a + b) + c = a + (b + c)$

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4. Additive inverse : For every $a \in \mathbb{Q}$, there exist ($\exists$) a rational number, such that $a + (-a) = 0$
5. Additive identity : 0 is the additive identity such that $a + 0 = 0 + a$

Try all the extra questions leased on the above topic.

Quest. 1. Verify the given statement.

(i) $\frac{4}{6} + \left(-\frac{2}{13}\right) = \left(-\frac{2}{13}\right) + \frac{4}{6}$

(ii) $\frac{1}{2} + \left(\frac{1}{16} + \frac{2}{3}\right) = \left(\frac{1}{2} + \frac{1}{16}\right) + \frac{2}{3}$

Quest. 2. Simplify :

(i) $-\frac{3}{8} + \frac{4}{12} + \frac{1}{36}$

(ii) $-\frac{2}{3} + \frac{4}{-6} + \frac{23}{-8}$

Quest. 3. Mental maths :

(i) _____ is the additive identity.

(ii) $-\frac{2}{3} + \frac{6}{3} + \frac{5}{3} =$ _____

(iii) Name the property :

$2 + 0 = 0 + 2 =$ _____

(iv) The additive inverse of $-\frac{4}{3}$ and

$-\frac{6}{8}$ is _____ and _____.

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Quest-4 Draw the following rational numbers on the number line.

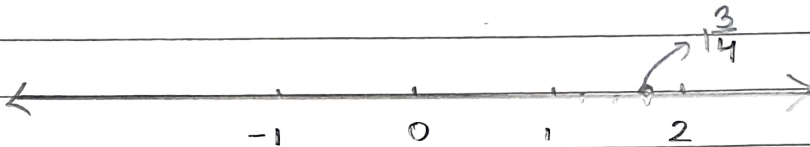
(i) $\frac{14}{8}$

(ii) $-\frac{3}{9}$

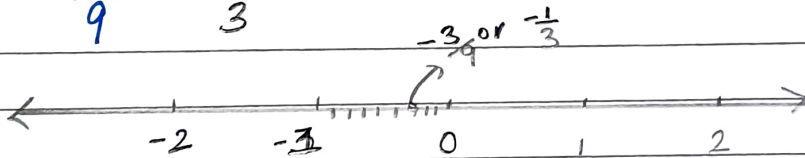
(iii) $2\frac{3}{5}$

Soln:

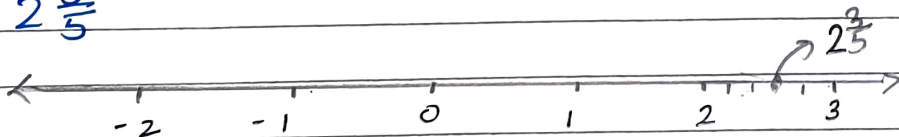
(i) $\frac{14}{8} = 1\frac{3}{4}$



(ii) $-\frac{3}{9}$ or $-\frac{1}{3}$



(iii) $2\frac{3}{5}$



Try all the questions from 1 to 4.

_____ x _____ x _____