

VIII Homework-2

- 1) Find four rational numbers between $-\frac{2}{3}$ and $\frac{11}{12}$.
- 2) Find a rational number between -2 and -3 .
- 3) Represent $-\frac{1}{5}, \frac{1}{5}, \frac{3}{5}$ on the number line.
- 4) The product of two rational numbers is $-\frac{7}{15}$. If one of them is $-\frac{3}{5}$, find the other.
- 5) By what number should we multiply $-\frac{3}{8}$ so that the product may be $-\frac{4}{9}$?
- 6) Divide the sum of $-\frac{5}{7}$ and $\frac{8}{12}$ by $-\frac{2}{3}$.
- 7) Divide the sum of $-\frac{7}{12}$ and $\frac{5}{8}$ by their difference.
- 8) Sam earns Rs 10,500 in a month. He spends $\frac{2}{3}$ of his salary on food and $\frac{1}{5}$ of remaining money on travelling. Find the expenditure incurred on both separately.
- 9) A bag of rice contains $112\frac{1}{4}$ kg rice. How much rice is contained in 64 such bags?
- 10) A train covers 550 km in 2 hours. What distance will it cover in $7\frac{1}{11}$ hours?
- 11) Find the cost of $45\frac{4}{5}$ kg of rice at the rate of Rs $27\frac{1}{2}$ per kg.
- 12) Simplify using distributive property: $-\frac{2}{7} \times \left(-\frac{14}{22} - \frac{21}{5}\right)$
- 13) $-8 \times \underline{\quad} = 1$; $-\frac{5}{-3} \times \underline{\quad} = 1$
- 14) Verify the distributive property: $x \times (y+z) = x \times y + x \times z$
where $x = -4, y = -\frac{1}{9}, z = -\frac{8}{15}$
- 15) Find the reciprocal of (i) 0 (ii) 1 (iii) -1 (iv) $-2x-3$ (v) $-\frac{1}{3} \times \frac{3}{5}$
- 16) Simplify: $-\frac{1}{3} - \left(-\frac{2}{3}\right) - \left(-\frac{3}{4}\right)$
- 17) Subtract $-\frac{5}{9}$ from $\frac{8}{9}$
- 18) Verify that $-(-x) = x$ for $x = -\frac{11}{15}$

VIII Homework-2 (Solutions)

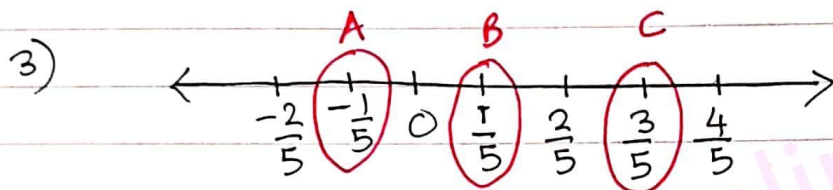
$$1) \quad \frac{-2 \times 4}{3 \times 4} \quad \frac{11}{12}$$

$$\quad \quad \frac{-8}{12} \quad \quad \frac{11}{12}$$

\therefore four rational numbers between $-\frac{2}{3}$ and $\frac{11}{12}$ are $0, -\frac{7}{12}, \frac{3}{12}$ and $\frac{5}{12}$

$$2) \text{ A rational number between } -2 \text{ and } -3 = \frac{-2 + -3}{2}$$

$$= \frac{-5}{2} = \underline{\underline{-2.5}}$$



Thus A, B and C represents $-\frac{1}{5}, \frac{1}{5}$ and $\frac{3}{5}$ on the numberline

4) Let the other number be x .

Then, $x \times -\frac{3}{5} = -\frac{7}{15}$

$$\therefore x = \frac{-7 \times -5}{15 \times 3} = \frac{7}{9} //$$

Hence the other number is $\frac{7}{9}$

5) Let the required number be x .

Then $x \times -\frac{3}{8} = -\frac{4}{9}$

$$\therefore x = \frac{-4 \times -8}{9 \times 3} = \frac{32}{27} //$$

Hence the required number is $\frac{32}{27}$

$$6) \quad \frac{-5 \times 12}{7 \times 12} + \frac{8 \times 7}{12 \times 7} = \frac{-60 + 56}{84} = \frac{-4}{84} = \frac{-1}{21}$$

Thus $-\frac{1}{21} \div -\frac{2}{3} = \frac{-1 \times -3}{21 \times 2} = \frac{1}{14}$

$$7) \quad -\frac{7 \times 2}{12 \times 2} + \frac{5 \times 3}{8 \times 3} = -\frac{14+15}{24} = \frac{1}{24}$$

$$-\frac{7 \times 2}{12 \times 2} - \frac{5 \times 3}{8 \times 3} = -\frac{14-15}{24} = -\frac{29}{24}$$

$$\text{Thus } \frac{1}{24} \div -\frac{29}{24} = \frac{1}{24} \times -\frac{24}{29} = \underline{\underline{-\frac{1}{29}}}$$

$$8) \quad \text{Amount Sam earns} = \text{Rs } 10500$$

$$\text{Amount he spent on food} = \frac{2}{3} \times 10500 = \underline{\underline{\text{Rs } 7000}}$$

$$\text{Remaining money} = 10500 - 7000 = \text{Rs } 3500$$

$$\text{Amount spent on travelling} = \frac{1}{5} \times 3500 = \underline{\underline{\text{Rs } 700}}$$

$$9) \quad \text{Weight of 1 bag rice} = 112\frac{1}{4} = \frac{449}{4} \text{ kg}$$

$$\therefore \text{Weight of 64 bags} = \frac{64}{4} \times \frac{449}{4} = \underline{\underline{7184 \text{ kg}}}$$

$$10) \quad \text{Distance covered by train in 2 hours} = 550 \text{ km}$$

$$\therefore \text{Distance covered in 1 hour} = \frac{550}{2} = 275 \text{ km}$$

$$7\frac{1}{11} = \frac{78}{11}$$

$$\text{Thus distance covered in } \frac{78}{11} \text{ hours} = 275 \times \frac{78}{11}$$

$$= \underline{\underline{1950 \text{ km}}}$$

$$11) \quad \text{Cost of 1 kg rice} = \text{Rs } 27\frac{1}{2} = \text{Rs } \frac{55}{2}$$

$$45\frac{4}{5} = \frac{229}{5}$$

$$\therefore \text{Cost of } \frac{229}{5} \text{ kg rice} = \frac{55}{2} \times \frac{229}{5} = \underline{\underline{\text{Rs } 1259.5}}$$

$$12) \quad -\frac{2}{7} \times \left(-\frac{14}{22} - \frac{21}{5}\right) = \left(-\frac{2}{7} \times -\frac{14}{22}\right) - \left(-\frac{2}{7} \times \frac{21}{5}\right)$$

$$= \frac{2 \times 5}{11 \times 5} + \frac{6 \times 11}{5 \times 11} = \frac{10+66}{55}$$

$$= \underline{\underline{\frac{76}{55}}}$$

$$13) -8 \times \underline{-\frac{1}{8}} = 1$$

$$\underline{-\frac{5}{-3}} \times \underline{\frac{3}{5}} = 1$$

$$14) \text{ LHS, } x \times (y+z) = -4 \left(-\frac{1}{9} + \frac{-8}{15} \right)$$

$$= -4 \left(\frac{-1 \times 5}{9 \times 5} - \frac{8 \times 3}{15 \times 3} \right)$$

$$= -4 \left(\frac{-5-24}{45} \right) = -4 \times \frac{-29}{45} = \frac{116}{45} //$$

$$\text{RHS, } x \times y + x \times z = \left(-4 \times -\frac{1}{9} \right) + \left(-4 \times \frac{-8}{15} \right)$$

$$= \frac{4 \times 5}{9 \times 5} + \frac{32 \times 3}{15 \times 3} = \frac{20+96}{45} = \frac{116}{45} //$$

\therefore LHS = RHS. Hence verified

15) (i) reciprocal of 0 is not defined

(ii) reciprocal of 1 is 1

(iii) reciprocal of -1 is -1

(iv) reciprocal of -2×-3 is $\frac{1}{6}$

(v) reciprocal of $\frac{-1 \times 3}{3 \times 5}$ is -5

$$16) -\frac{1}{3} + \frac{2}{3} + \frac{3}{4} = \frac{1 \times 4}{3 \times 4} + \frac{3 \times 3}{4 \times 3} = \frac{4+9}{12} = \frac{13}{12}$$

$$17) \frac{8}{9} - \left(-\frac{5}{9} \right) = \frac{8}{9} + \frac{5}{9} = \frac{13}{9}$$

$$18) \text{ LHS, } -(-x) = -\left(-\left(-\frac{11}{15} \right) \right) = -\frac{11}{15}$$

$$\text{RHS, } x = \frac{-11}{15}$$

\therefore LHS = RHS

Hence verified