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NCERT Class 7 Mathematics Solutions: Chapter 9 – Rational Numbers Exercise 9.2 Part 1

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Dividing Rational Numbers ^{**}(19.)

Definition: To divide any rational number by another, multiply by the multiplicative inverse (the reciprocal)

Change all division to multiplication by the reciprocal!

Example: $\frac{2}{3} \div \frac{3}{4} = \frac{2}{3} \cdot \frac{4}{3}$

1. Find the sum:

$$(i) \frac{4}{5} + \left(-\frac{11}{4}\right)$$

$$(ii) \frac{5}{3} + \frac{3}{5}$$

$$(iii) -\frac{9}{10} + \frac{22}{15}$$

$$(iv) -\frac{3}{-11} + \frac{5}{9}$$

$$(v) -\frac{8}{19} + \frac{(-2)}{57}$$

$$(vi) -\frac{2}{3} + 0$$

$$(vii) -2\frac{1}{3} + 4\frac{3}{5}$$

Answer:

$$(i) \frac{5}{4} + \left(-\frac{11}{4}\right)$$

$$= \frac{5}{4} - \frac{11}{4}$$

$$= \frac{5-11}{4}$$

$$= -\frac{6}{4}$$

$$= -\frac{3}{2}$$

$$(ii) \frac{5}{3} + \frac{3}{5}$$

L. C. M of 3 and 5 is 15

$$\frac{5}{3} + \frac{3}{5} = \frac{5 \times 5}{3 \times 5} + \frac{3 \times 3}{5 \times 3}$$

$$= \frac{25}{15} + \frac{9}{15}$$

$$= \frac{34}{15}$$

$$(iii) -\frac{9}{10} + \frac{22}{15}$$

L. C. M of 10 and 15 is 30

$$= -\frac{9}{10} + \frac{22}{15} = -\frac{9 \times 3}{10 \times 3} + \frac{22 \times 2}{15 \times 2}$$

$$= -\frac{27}{30} + \frac{44}{30}$$

$$= \frac{17}{30}$$

$$(iv) -\frac{3}{-11} + \frac{5}{9}$$

$$\frac{3}{11} + \frac{5}{9}$$

L. C. M of 11 and 9 is 99

$$\begin{aligned}\frac{3}{11} + \frac{5}{9} &= \frac{3 \times 9}{11 \times 9} + \frac{5 \times 11}{9 \times 11} \\&= \frac{27}{99} + \frac{55}{99} \\&= \frac{82}{99}\end{aligned}$$

$$\begin{aligned}\text{(v)} \quad -\frac{8}{19} + \frac{-2}{57} \\&= -\frac{8}{19} - \frac{2}{57}\end{aligned}$$

L. C. M of 19 and 57 is 99

$$\begin{aligned}\frac{8}{19} - \frac{2}{57} &= -\frac{8 \times 3}{19 \times 3} - \frac{2 \times 1}{57 \times 1} \\&= -\frac{24}{57} - \frac{2}{57} \\&= -\frac{26}{57}\end{aligned}$$

$$\begin{aligned}\text{(vi)} \quad -\frac{2}{3} + 0 \\&= -\frac{2}{3}\end{aligned}$$

$$\begin{aligned}\text{(vii)} \quad -2\frac{1}{3} + 4\frac{3}{5} \\&= -\frac{7}{3} + \frac{23}{5}\end{aligned}$$

L. C. M of 3 and 5 is 15

$$\begin{aligned}-\frac{7}{3} + \frac{23}{5} &= -\frac{7 \times 5}{3 \times 5} + \frac{23 \times 3}{5 \times 3} \\&= -\frac{35}{15} + \frac{69}{15} \\&= \frac{34}{15}\end{aligned}$$