

Class 7-Mathematics

Instructions for students: The notes provided must be copied to the Maths copy and then do the homework in the same copy.

Chapter 3

RATIONAL NUMBERS

Exercise 3.3

$$2. \text{ iii) } -3\frac{1}{6} + 2\frac{3}{8} = \frac{-19}{6} + \frac{19}{8} \quad \text{L.C.M of 6 and 8 = 24}$$

$$= \frac{(-19 \times 4) + (19 \times 3)}{24}$$

$$= \frac{-76 + 57}{24}$$

$$= \frac{-19}{24}$$

$$4. \text{ iii) } 3\frac{1}{8} - \left(-1\frac{5}{6}\right) = \frac{25}{8} - \left(\frac{-11}{6}\right)$$
$$= \frac{25}{8} + \left(\frac{11}{6}\right) \quad \text{[Adding the additive inverse of } \frac{-11}{6} \text{ i.e. } \frac{11}{6} \text{]}$$

$$= \frac{25 \times 3 + 11 \times 4}{24}$$

$$= \frac{75 + 44}{24}$$

$$= \frac{119}{24} = 4\frac{23}{24}$$

$$5. \text{ Hint: Subtract } \frac{-4}{7} \text{ from } \frac{2}{5}$$

$$6. \text{ Hint: Subtract } \frac{-5}{12} \text{ from } \frac{-7}{8}$$

$$8. \text{ vi) } \frac{-105}{128} \times \left(-1\frac{29}{35}\right) = \frac{-105}{128} \times \left(\frac{-64}{35}\right)$$

$$= \frac{-105 \cancel{-3}}{128 \cancel{2}} \times \frac{\cancel{-64} \cancel{-1}}{\cancel{-35} \cancel{1}} \quad \text{[Reducing to Lowest terms]}$$

$$= \frac{-3 \times -1}{2 \times 1}$$

$$= \frac{3}{2} = 1\frac{1}{2}$$

$$9. \text{ v) } \frac{-48}{49} \div \frac{72}{-35} = \frac{-48}{49} \times \frac{-35}{72} \quad \text{[Multiplying with reciprocal]}$$

$$\begin{aligned}
&= \frac{-48-2}{49-7} \times \frac{-35-5}{72-3} \quad \text{[Reducing to Lowest terms]} \\
&= \frac{-2}{7} \times \frac{-5}{3} \\
&= \frac{-2 \times -5}{7 \times 3} \\
&= \frac{10}{21}
\end{aligned}$$

10. Hint: The other number = $\frac{18}{35} \div \frac{-2}{5}$

11. i) Find the value of $\left(\frac{13}{21} \div \frac{39}{42}\right) \times \frac{-3}{5}$

$$\begin{aligned}
\left(\frac{13}{21} \div \frac{39}{42}\right) \times \frac{-3}{5} &= \left(\frac{13}{\cancel{21} 1} \times \frac{42}{39} \times \frac{2}{3}\right) \times \frac{-3}{5} \quad \text{[Simplifying inside the bracket using BODMAS rule]} \\
&= \left(\frac{1}{1} \times \frac{2}{3}\right) \times \frac{-3}{5} \\
&= \frac{2}{3} \times \frac{-3-1}{5} \\
&= \frac{2 \times -1}{1 \times 5} \\
&= \frac{-2}{5}
\end{aligned}$$

12. ii) Find the reciprocal of $\left(-5 \times \frac{12}{15}\right) - \left(-3 \times \frac{2}{9}\right)$

Here we simplify the given expression and write as a single fraction

$$\left(-5 \times \frac{12}{15}\right) - \left(-3 \times \frac{2}{9}\right) = (-1 \times 4) - \left(-1 \times \frac{2}{3}\right) \quad \text{[Taking lowest terms Inside each bracket]}$$

$$\begin{aligned}
&= (-4) - \left(\frac{-2}{3}\right) \\
&= -4 + \frac{2}{3} \\
&= \frac{(-4 \times 3) + 2}{3} \\
&= \frac{-12 + 2}{3} \\
&= \frac{-10}{3}
\end{aligned}$$

Reciprocal of $\frac{-10}{3} = \frac{3}{-10}$ Or $\frac{-3}{10}$

Home Work: Complete **Exercise 3.3** in the Maths copy.

Watch the video for more solutions.

Class 7 Maths