



Division of Fractions

Understanding the Topic

- Division of fractions means sharing or splitting a quantity.
- To divide a fraction, we multiply by the reciprocal of the second fraction.
- The reciprocal of a fraction $\frac{a}{b}$ is $\frac{b}{a}$.
- For dividing a fraction by a whole number, convert the whole number into a fraction.
- Always simplify the answer and convert into a mixed number if needed.

Examples with Solutions

Example:

Divide $\frac{1}{2} \div \frac{1}{4}$

$$\text{Multiply } \frac{1}{2} \times \frac{4}{1} = \frac{4}{2} = 2$$

Answer: 2

Example:

Divide $\frac{3}{5} \div 2$

Convert 2 into a fraction: $2 = \frac{2}{1}$

$$\frac{3}{5} \times \frac{1}{2} = \frac{3}{10}$$

Answer: $\frac{3}{10}$

Example:

Divide $4 \div \frac{1}{2}$

Convert 4 into $\frac{4}{1}$

$$\frac{4}{1} \times \frac{2}{1} = \frac{8}{1} = 8$$

Answer: 8



Example:

Divide $\frac{5}{6} \div \frac{1}{3}$

$$\frac{5}{6} \times \frac{3}{1} = \frac{15}{6} = \frac{5}{2} = 2\frac{1}{2}$$

Answer: $2\frac{1}{2}$

Example:

Divide $\frac{7}{8} \div 7$

Convert 7 into $\frac{7}{1}$

$$\frac{7}{8} \times \frac{1}{7} = \frac{1}{8}$$

Answer: $\frac{1}{8}$

Summary Points

- To divide fractions, multiply the first fraction by the reciprocal of the second.
- Whole numbers can be written as fractions by placing 1 as the denominator.
- Always simplify the answer and write as a mixed number if needed.
- Division of fractions helps in solving sharing, measuring, and portioning problems.
- Practice helps in mastering reciprocal and simplification steps.