

RD Sharma
Solutions

Class 7

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Exercise 2.3

Q1 Find the reciprocal of each of the following fractions and classify them as proper, improper and whole number.

(i) $\frac{3}{7}$ (ii) $\frac{5}{8}$ (iii) $\frac{9}{7}$ (iv) $\frac{6}{5}$ (v) $\frac{12}{7}$ (vi) $\frac{1}{8}$

Solution: (i) Reciprocal of $\frac{3}{7}$ is $\frac{7}{3}$ (Improper)

(ii) Reciprocal of $\frac{5}{8}$ is $\frac{8}{5}$ (Improper)

(iii) Reciprocal of $\frac{9}{7}$ is $\frac{7}{9}$ (Proper fraction)

(iv) Reciprocal of $\frac{6}{5}$ is $\frac{5}{6}$ (Proper fraction)

(v) Reciprocal of $\frac{12}{7}$ is $\frac{7}{12}$ (Proper fraction)

(vi) Reciprocal of $\frac{1}{8}$ is 8 (whole number)

Q.2 Divide:

(i) $\frac{3}{8}$ by $\frac{5}{9}$

(ii) $3\frac{1}{4}$ by $\frac{2}{3}$

(iii) $\frac{7}{8}$ by $4\frac{1}{2}$

(iv) $6\frac{1}{4}$ by $2\frac{3}{5}$

Solution: (i) $\frac{3}{8} \div \frac{5}{9} = \frac{3}{8} \times \frac{9}{5} = \frac{27}{40}$

(ii) $3\frac{1}{4} \div \frac{2}{3} = \frac{13}{4} \div \frac{2}{3}$
 $= \frac{13}{4} \times \frac{3}{2} = \frac{39}{8}$

$$(iii) \frac{7}{8} \text{ by } 4\frac{1}{2} = \frac{7}{8} \div \frac{9}{2} \\ = \frac{7}{8} \times \frac{2}{9} = \frac{14}{72} = \frac{7}{36}$$

$$(iv) 6\frac{1}{4} \div 2\frac{3}{5} = \frac{25}{4} \div \frac{13}{5} \\ = \frac{25}{4} \times \frac{5}{13} = \frac{125}{52} = 2\frac{21}{52}$$

Q.3 Divide:

(i) $\frac{3}{8}$ by 4

(ii) $\frac{9}{16}$ by 6

(iii) 9 by $\frac{3}{16}$

(iv) 10 by $\frac{100}{3}$

Solution (i) $\frac{3}{8} \div 4 = \frac{3}{8} \times \frac{1}{4} = \frac{3}{32}$

(ii) $\frac{9}{16} \div 6 = \frac{9}{16} \times \frac{1}{6} = \frac{9}{96} = \frac{3}{32}$

(iii) $9 \div \frac{3}{16} = 9 \times \frac{16}{3} = \frac{144}{3} = 48$

(iv) $10 \div \frac{100}{3} = 10 \times \frac{3}{100} = \frac{3}{10}$

Q.4 Simplify: (i) $\frac{3}{10} \div \frac{10}{3}$ (ii) $4\frac{3}{5} \div \frac{4}{5}$

(iii) $5\frac{4}{7} \div 1\frac{3}{10}$ (iv) $4 \div 2\frac{2}{5}$

Solution: (i) $\frac{3}{10} \div \frac{10}{3} = \frac{3}{10} \times \frac{3}{10} = \frac{9}{100}$

$$(ii) \quad 4\frac{3}{5} \div \frac{4}{5} = \frac{23}{5} \div \frac{4}{5} \\ = \frac{23}{5} \times \frac{5}{4} = \frac{23}{4} = 5\frac{3}{4}$$

$$(iii) \quad 5\frac{4}{7} \div 1\frac{3}{10} = \frac{39}{7} \div \frac{13}{10} \\ = \frac{39}{7} \times \frac{10}{13} = \frac{30}{7} = 4\frac{2}{7}$$

$$(iv) \quad 4 \div 2\frac{2}{5} = 4 \div \frac{12}{5} = 4 \times \frac{5}{12} = \frac{5}{3} = 1\frac{2}{3}$$

Q.5 A wire of length $12\frac{1}{2}$ m is cut into 10 pieces of equal length. Find the length of each piece.

Solution: Total length of wire = $12\frac{1}{2}$ m = $\frac{25}{2}$ m

No. of pieces = 10.

$$\therefore \text{length of each piece} = \frac{25}{2} \div 10 \\ = \frac{25}{2} \times \frac{1}{10} = \frac{5}{4} \text{ m} \\ = 1\frac{1}{4} \text{ m.}$$

Q.6 The length of a rectangular plot of area $65\frac{1}{3}$ m² is $12\frac{1}{4}$ m. What is the width of the plot?

Solution: We are given that,
Area of rectangular plot = $65\frac{1}{3}$ m²
 $= \frac{196}{3}$ m²

$$\text{length of plot} = 12\frac{1}{4} \text{ m} = \frac{49}{4} \text{ m}.$$

$$\therefore \text{Width} = \text{Area} \div \text{length}$$

$$= \frac{196}{3} \div \frac{49}{4}$$

$$= \frac{196}{3} \times \frac{4}{49} = \frac{16}{3} \text{ m} = 5\frac{1}{3} \text{ m}$$

Q7 By what number should $6\frac{2}{9}$ be multiplied to get $4\frac{4}{9}$?

Solution: required number = $4\frac{4}{9} \div 6\frac{2}{9}$

$$= \frac{40}{9} \div \frac{56}{9} = \frac{40}{9} \times \frac{9}{56} = \frac{5}{7}$$

$$\therefore \text{required number} = \frac{5}{7}$$

Q8 The product of two numbers is $25\frac{5}{6}$. If one of the numbers is $6\frac{2}{3}$, find the other.

Solution: required number = $25\frac{5}{6} \div 6\frac{2}{3}$

$$= \frac{155}{6} \div \frac{20}{3} = \frac{155}{6} \times \frac{3}{20} = \frac{31}{8} = 3\frac{7}{8}$$

Q.9 The cost of $6\frac{1}{4}$ kg of apples is Rs. 400. At what rate per kg are the apples being sold?

Solution!

$$\text{Cost of } 6\frac{1}{4} \left(\frac{25}{4} \text{ kg}\right) \text{ apples} = \text{Rs. } 400$$

$$\therefore \text{Cost of 1 kg apple} = 400 \div \frac{25}{4}$$

$$= 400 \times \frac{4}{25} = \text{Rs. } 64.$$

Q.10 By selling oranges at the rate of Rs. $5\frac{1}{4}$ per orange, a fruit seller gets Rs. 630. How many dozens of oranges does he sell?

Solution! Total selling price of oranges = Rs. 630

$$\text{Cost of 1 orange} = \text{Rs. } 5\frac{1}{4} = \frac{21}{4} \text{ Rupees}$$

$$\therefore \text{Number of oranges sold} = 630 \div \frac{21}{4}$$

$$= 630 \times \frac{4}{21} =$$

$$= 120 \text{ oranges.}$$

$$\text{hence } \frac{120}{12} = 10 \text{ dozens.}$$

Q.11 In mid day meal scheme $\frac{3}{10}$ litres of milk is given to each student of a primary school. If 30 litres of milk is distributed every day in the

(25)

School, how many students are there in the School.

Solution: Total quantity of milk = 30 litres.
Milk given to each student = $\frac{3}{10}$ litre

$$\begin{aligned}\therefore \text{No. of students in school} &= 30 \div \frac{3}{10} \\ &= 30 \times \frac{10}{3} = 100 \text{ students}\end{aligned}$$

Q.12 In a charity show Rs 6496 were collected by selling some tickets. If the price of each ticket was Rs $50\frac{3}{4}$. How many tickets were sold?

Solution: Total Amount collected in charity show
= Rs 6496

$$\text{Price of each ticket} = \text{Rs. } 50\frac{3}{4} = \frac{203}{4}$$

$$\begin{aligned}\therefore \text{Number of tickets sold} &= 6496 \div \frac{203}{4} \\ &= 6496 \times \frac{4}{203} \\ &= 128 \text{ tickets.}\end{aligned}$$
