RD SHARMA

Solutions

Class 7 Maths

Chapter 2

Ex 2.2

Q1. Multiply

$\frac{7}{11}$ by $\frac{3}{5}$

$\frac{3}{5}$ by 25

$3\frac{4}{15}$ **by 24**

$3\frac{1}{8}$ by $4\frac{10}{11}$

Solution:

We have, $\frac{7}{11}$ by $\frac{3}{5}$

=

$$\frac{7}{11} \times \frac{3}{5}$$
$$= \frac{21}{55}$$

(ii) We have, $\frac{3}{5}$ by 25

=

$$\frac{3}{5} \times 25$$
$$= 15$$

(iii) We have, $3\frac{4}{15}$ by 24

=

$$3\frac{4}{15} \times 24$$
$$= \frac{49}{15} \times 24$$
$$= \frac{1176}{24}$$
$$= 78\frac{2}{5}$$

(iv) We have, $3\frac{1}{8}$ by $4\frac{10}{11}$

=

$$3\frac{1}{8} \text{ by } 4\frac{10}{11}$$
$$= \frac{25}{8} \times \frac{54}{11}$$
$$= \frac{25 \times 54}{88}$$
$$= 15\frac{15}{44}$$

Q2. Find the product:

$$\frac{4}{7} \times \frac{14}{25}$$

$7\frac{1}{2} \times 2\frac{4}{15}$

$3\frac{6}{7} \times 4\frac{2}{3}$

$6\frac{11}{14} \times 3\frac{1}{2}$

Solution:

We have,

$$\frac{4}{7} \times \frac{14}{25}$$
$$= \frac{4 \times 14}{7 \times 25}$$
$$= \frac{56}{175}$$
$$= \frac{8}{25}$$

We have,

$$7\frac{1}{2} \times 2\frac{4}{15}$$
$$= \frac{15}{2} \times \frac{34}{15}$$
$$= \frac{15 \times 34}{2 \times 15}$$
$$= \frac{510}{30}$$
$$= 17$$

We have,

$$3\frac{6}{7} \times 4\frac{2}{3}$$
$$= \frac{27}{7} \times \frac{14}{3}$$
$$= 3 \times \frac{14}{3}$$
$$= 14$$

We have,

$$6\frac{11}{14} \times 3\frac{1}{2}$$
$$= \frac{95}{14} \times \frac{7}{2}$$
$$= \frac{95 \times 7}{28}$$
$$= \frac{665}{28}$$
$$= 23\frac{3}{4}$$

Q3. Simplify:

$\frac{12}{25} \times \frac{15}{28} \times \frac{35}{36}$

$\frac{10}{27} \times \frac{39}{56} \times \frac{28}{65}$

$2\frac{2}{17} \times 7\frac{2}{9} \times 1\frac{33}{52}$

Solution:

We have,

$$\frac{12}{25} \times \frac{15}{28} \times \frac{35}{36}$$
$$= \frac{12 \times 15 \times 35}{25 \times 28 \times 36}$$
$$= \frac{6300}{25200}$$
$$= \frac{1}{4}$$

$$\frac{10}{27} \times \frac{39}{56} \times \frac{28}{65}$$
$$= \frac{10 \times 39 \times 28}{27 \times 56 \times 65}$$
$$= \frac{10920}{98280}$$
$$= \frac{1}{9}$$

We have,

$$2\frac{2}{17} \times 7\frac{2}{9} \times 1\frac{33}{52}$$
$$= \frac{36}{17} \times \frac{65}{9} \times \frac{85}{52}$$
$$= \frac{36 \times 65 \times 85}{17 \times 9 \times 52}$$
$$= \frac{198900}{7956}$$
$$= 25$$

Q4. Find:

$\frac{1}{2}$ of $4\frac{2}{9}$

$\frac{5}{8}$ of $9\frac{2}{3}$

$\frac{2}{3}$ of $\frac{9}{16}$

Solution:

We have,

$$\frac{1}{2} \text{of} 4\frac{2}{9}$$
$$= \frac{1}{2} \times \frac{38}{9}$$
$$= \frac{38}{18}$$
$$= 2\frac{1}{9}$$

$$\frac{5}{8} \text{of} 9\frac{2}{3}$$
$$= \frac{5}{8} \times \frac{29}{3}$$
$$= \frac{5 \times 29}{8 \times 3}$$
$$= \frac{145}{24}$$
$$= 6\frac{1}{24}$$

We have,

$$\frac{2}{3} \text{ of} \frac{9}{16}$$
$$= \frac{2}{3} \times \frac{9}{16}$$
$$= \frac{2 \times 9}{3 \times 16}$$
$$= \frac{18}{48}$$
$$= \frac{3}{8}$$

Q5. Which is greater ? $\frac{1}{2}$ of $\frac{6}{7}$ or $\frac{2}{3}$ of $\frac{3}{7}$.

Solution:

Given,

$$\frac{1}{2} \text{ of } \frac{6}{7} \text{ or } \frac{2}{3} \text{ of } \frac{3}{7}$$
$$= \frac{1}{2} \times \frac{6}{7} \text{ or } \frac{2}{3} \times \frac{3}{7}$$
$$= \frac{1 \times 6}{2 \times 7} \times \frac{2 \times 3}{3 \times 7}$$
$$= \frac{6}{14} \text{ or } \frac{6}{21}$$

While comparing two fractions, when the numerators of both the fractions are same, then the denominator having higher value shows the fraction has lower value.

So, $\frac{6}{14}$ is greater.

Therefore, $\frac{1}{2}$ of $\frac{6}{7}$ is greater.

Q6. Find,

$\frac{7}{11}$ of 330

$\frac{5}{9}$ of 108 meters

$\frac{3}{7}$ of 42 litres

$\frac{1}{12}$ **of an hour**

$\frac{5}{6}$ **of an year**

$\frac{3}{20}$ **of a Kg**

$\frac{7}{20}$ **of a litres**

$\frac{5}{6}$ **of a day**

$\frac{2}{7}$ **of a week**

Solution:

We have,

$$\frac{7}{11} \text{ of } 330$$
$$= \frac{7}{11} \times 330$$
$$= 7 \times 30$$
$$= 210$$

We have,

$$\frac{5}{9} \text{ of } 108 \text{ meters}$$
$$= \frac{5}{9} \times 108 \text{ meters}$$
$$= 5 \times 12 \text{ meters}$$
$$= 60 \text{ meters}$$

We have,

$$\frac{3}{7} \text{ of } 42 \text{ litres}$$
$$= \frac{3}{7} \times 42 \text{ litres}$$
$$= 3 \times 6 \text{ litres}$$
$$= 18 \text{ litres}$$

We have, $\frac{1}{12}$ of an hour

An hour = 60 minutes

Therefore,

$$\frac{1}{12} \times 60 \text{ minutes}$$
$$= 5 \text{ minutes}$$

(v) We have, $\frac{5}{6}$ of an year

I Year = 12 months

Therefore,

$$\frac{5}{6} \times 12 \text{ months}$$
$$= 5 \times 2 \text{ months}$$
$$= 10 \text{ months}$$

(vi) We have, $\frac{3}{20}$

1 Kg = 1000 gms

Therefore,

$$\frac{3}{20} \times 1000 \text{ gms}$$
$$= 3 \times 50 \text{ gms}$$
$$= 150 \text{ gms}$$

(vii) We have, $\frac{7}{20}$ of a litre

1 litre = 1000 ml

Therefore,

$$\frac{7}{20} \times 1000 \text{ ml}$$
$$= 7 \times 50 \text{ ml}$$
$$= 350 \text{ ml}$$

(viii) We have, $\frac{5}{6}$ of a day

I day = 24 hours

Therefore,

$$\frac{5}{6} \times 24 \text{ hours}$$
$$= 5 \times 4 \text{ hours}$$
$$= 20 \text{ hours}$$

(ix) We have, $\frac{2}{7}$ of a week

I week = 7 days

Therefore,

$$\frac{2}{7} \times 7 \text{ days}$$
$$= 2 \text{ days}$$

Q7. Shikha plans 5 saplings in a row in her garden. The distance between two adjacent saplings is $\frac{3}{4}$ m. Find the distance between first and last sapling.

Solution:

There are 4 adjacent spacing for 5 saplings.

Given, the distance between two adjacent saplings is $\frac{3}{4}$ m.

4 adjacent spacing for 5 saplings $= \frac{3}{4} \times 4 = 3$ m

Therefore, the distance between first and last sapling is 3 m.

Q8. Ravish reads $\frac{1}{3}$ part of a book in one hour. How much part of the book will he read in $2\frac{1}{5}$ hours?

Solution:

Let x be the full part of book.

Given, Ravish reads $\frac{1}{3}$ part of a book in one hour

1 hour $= \frac{1}{3}$ x

Part of the book will he read in $2\frac{1}{5}$ hours

$2\frac{1}{5} = \frac{11}{5}$ hours $= \frac{1}{3} \times X \times \frac{11}{5}$

$\frac{11}{15}$ x $= \frac{11}{15}$ part of book

Q9. Lipika reads a book for $1\frac{3}{4}$ hours every day. She reads the entire book in 6 days. How many hours in all were required by her to read the book?

Solution:

Given,

Time taken by Lipika to read a book per day $= 1\frac{3}{4} = \frac{7}{4}$ hours

Time taken by Lipika to read a book for 6 days $= \frac{7}{4} \times 6 = \frac{42}{4} = 10\frac{1}{2}$ hours.

Q10. Find the area of a rectangular park which is $41\frac{2}{3}$ m long and $18\frac{3}{5}$ m broad.

Solution:

Given,

$$41\frac{2}{3} \text{ m} = \frac{145}{3} \text{ m}$$
$$\text{And, } 18\frac{3}{5} \text{ m} = \frac{93}{5} \text{ m}$$

Area of a rectangular park = (length x breadth) =
$$(\frac{125}{3} \text{ m} \times \frac{93}{5} \text{ m})$$
$$= (\frac{125 \times 93}{15}) \text{m}^2$$
$$= (\frac{11625}{15}) \text{m}^2$$
$$= 775 \text{m}^2$$

Q11. If milk is available at Rs $17\frac{3}{4}$ per litre, find the cost of $7\frac{2}{5}$ litres of milk.

Solution:

Given,

$$Rs 17\frac{3}{4} = Rs\frac{71}{4}$$
$$\text{And, } 7\frac{2}{5} \text{ litres} = \frac{37}{5} \text{ litres}$$

The cost of milk per litre $= Rs\frac{71}{4}$

The cost of milk per $\frac{37}{5}$ litres = Rs

$$\frac{37}{5} \times \frac{71}{4}$$
$$= Rs \frac{2327}{20}$$
$$= Rs 131 \frac{7}{20}$$

Q12. Sharda can walk $8\frac{1}{3}$ km in one hour. How much distance will she cover in $2\frac{2}{5}$ hours.

Solution:

Given,

$$8\frac{1}{3} km = \frac{25}{3} km$$
$$2\frac{2}{5} hours = \frac{12}{5} hours$$

Distance covered by Sharda in one hour $= \frac{25}{3} km$

Distance covered by Sharda in $\frac{12}{5}$ hours $= 2\frac{2}{5} \times \frac{25}{3} = 20$ km

Q13. A sugar bag contains 30 kg of sugar. After consuming $\frac{2}{3}$ of it, how much sugar is left in the bag

Solution:

Given, A sugar bag contains 30 kg of sugar.

After consuming $\frac{2}{3}$ of it, the amount of sugar left in the bag =

$$30kg - \frac{2}{3} \times 30kg$$
$$= 30kg - 20kg$$
$$= 10kg$$

Q14. Each side of a square is $6\frac{2}{3}$ m long. Find its area.

Solution:

Given,

Each side $= 6\frac{2}{3} m = \frac{20}{3} m$

Area $= side^2 = (\frac{20}{3})^2 m^2 =$

$$\frac{400}{9} m^2$$
$$= 44\frac{4}{9} m^2$$

Q15. There are 45 students in a class and $\frac{3}{5}$ of them are boys. How many girls are there in the class?

Solution:

Given,

There are 45 students in a class,

And $\frac{3}{5}$ of them are boys.

Therefore, no of girls in the class $= 45 - \frac{3}{5} \times 45$

$= 45 - 27$

$= 18$