



CLASS 6TH
learnkwniy
MATHS
CHAPTER- 12th
RATIO
AND
PROPORTION

EXERCISE- 12.1

NCERT SOLUTION

1. There are 20 girls and 15 boys in a class.

(a) What is the ratio of number of girls to the number of boys?

Ans.

Number of girls = 20 girls

Number of boys = 15 boys

Total number of students = 20 + 15 = 35

Ratio of Number of Girls to the number of boys = $\frac{20}{15} = \frac{4}{3}$

(b) What is the ratio of number of girls to the total number of students in the class?

Ans.

Number of girls = 20 girls

Number of boys = 15 boys

Total number of students = 20 + 15 = 35

Ratio of Number of Girls to the number of Students = $\frac{20}{35} = \frac{4}{7}$

2. Out of 30 students in a class, 6 like football, 12 like cricket and remaining like tennis. Find the ratio of

(a) Number of students liking football to number of students liking tennis.

Ans.

Total Students = 30 Students

Number of Students like to play Football = 6

Number of Students like to play Cricket = 12

Remaining like to play tennis = 30 – (6 + 12) = 30 – 18 = 12

Number of students liking football to number of students liking tennis = $\frac{6}{12} = \frac{1}{2}$

(b) Number of students liking cricket to total number of students.

Ans.

Total Students = 30 Students

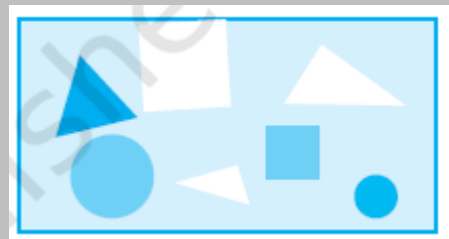
Number of Students like to play Football = 6

Number of Students like to play Cricket = 12

Remaining like to play tennis = $30 - (6 + 12) = 30 - 18 = 12$

Number of students liking cricket to total number of students = $\frac{12}{30} = \frac{2}{5}$

3. See the figure and find the ratio of



(a) Number of triangles to the number of circles inside the rectangle.

Ans.

Number of triangles to the number of circles inside the rectangle = $\frac{3}{2}$

(b) Number of squares to all the figures inside the rectangle.

Ans.

Number of squares to all the figures inside the rectangle = $\frac{2}{7}$

(c) Number of circles to all the figures inside the rectangle.

Ans.

Number of circles to all the figures inside the rectangle = $\frac{2}{7}$

4. Distances travelled by Hamid and Akhtar in an hour are 9 km and 12 km. Find the ratio of speed of Hamid to the speed of Akhtar.

Ans.

Distance travelled by Hamid in an hour = 9 km

Distance travelled by Akhtar in an hour = 12 km

Ratio of speed of Hamid to the speed of Akhtar = $\frac{9}{12} = \frac{3}{4}$

5. Fill in the following blanks

$$\frac{15}{18} = \frac{\square}{6} = \frac{10}{\square} = \frac{\square}{30} \quad \text{[Are these equivalent ratios?]}$$

Ans.

$$\frac{15}{18} = \frac{5}{6} = \frac{10}{12} = \frac{25}{30}$$

Yes, all these are equivalent ratios.

6. Find the ratio of the following:

(a) 81 to 108

Ans.

$$\frac{81}{108} = \frac{3}{4}$$

$$\frac{81 \div 3}{108 \div 3} = \frac{27 \div 3}{36 \div 3} = \frac{9 \div 3}{12 \div 3} = \frac{3}{4}$$

(b) 98 to 63

Ans.

$$\frac{98}{63} = \frac{14}{9}$$

$$\frac{98 \div 7}{63 \div 7} = \frac{14}{9}$$

(c) 33 km to 121 km

Ans.

$$\frac{33}{121} = \frac{33 \div 11}{121 \div 11} = \frac{3}{11}$$

(d) 30 minutes to 45 minutes

Ans.

$$\frac{30}{45} = \frac{2}{3}$$

$$\frac{30 \div 5}{45 \div 5} = \frac{6 \div 3}{9 \div 3} = \frac{2}{3}$$

7. Find the ratio of the following:

(a) 30 minutes to 1.5 hours

Ans.

1 hour = 60 minutes

1.5 hour = 60 X 1.5 = 90 minutes

Ratio of 30min to 1.5 hours or

$$\text{Ratio of 30min to 90minutes} = \frac{30}{90} = \frac{30 \div 10}{90 \div 10} = \frac{3 \div 3}{9 \div 3} = \frac{1}{3} = 1:3$$

(b) 40 cm to 1.5 m

Ans.

1m = 100cm

1.5m = 100 X 1.5 = 150cm

Ratio of 40cm to 1.5m or

$$\text{Ratio of 40cm to 150cm} = \frac{40}{150} = \frac{40 \div 10}{150 \div 10} = \frac{4}{15} = 4:15$$

(c) 55 paise to ₹1

Ans.

₹1 = 100 paise

Ratio of 55 paise to ₹1

$$\text{Ratio of 55 paise to 100 paise} = \frac{55}{100} = \frac{55 \div 5}{100 \div 5} = \frac{11}{20} = 11:20$$

(d) 500 mL to 2 litres

Ans.

1 litre = 1000mL

2 litres = 2 X 1000 = 2000 mL

Ratio of 500 mL to 2 litres or

$$\text{Ratio of 500 mL to 2000 mL} = \frac{500}{2000} = \frac{500 \div 100}{2000 \div 100} = \frac{5 \div 5}{20 \div 5} = 1:4$$

8. In a year, Seema earns ₹1, 50,000 and saves ₹50,000.

Find the ratio of

(a) Money that Seema earns to the money she saves.

Ans.

Earning = ₹ 1, 50, 000

Saving = ₹50, 000

Money spend by her = 1, 50,000 – 50,000 = ₹1, 00,000

Money that Seema earns to the money she saves = $\frac{1,50,000}{50,000} = \frac{15 \div 5}{5 \div 5} = \frac{3}{1} = 3:1$

(b) Money that she saves to the money she spends.

Ans.

Money that she saves to the money she spends = $\frac{50,000}{1,00,000} =$

$$\frac{5 \div 5}{10 \div 5} = \frac{1}{2} = 1:2$$

9. There are 102 teachers in a school of 3300 students.

Find the ratio of the number of teachers to the number of students.

Ans.

Number of Teachers = 102

Number of Students = 3300

The ratio of the number of teachers to the number of students = $\frac{102}{3300} = \frac{102 \div 2}{3300 \div 2} =$

$$\frac{51 \div 3}{1650 \div 3} = \frac{17}{550} = 17:550$$

10. In a college, out of 4320 students, 2300 are girls. Find the ratio of

(a) Number of girls to the total number of students.

Ans.

No. of Students = 4320

No. of Girls = 2300

No. of Boys = 4320 – 2300 = 2020

Ratio of Number of girls to the total number of students = $\frac{2300}{4320} = \frac{2300 \div 2}{4320 \div 2} = \frac{1150 \div 2}{2160 \div 2} =$

$$\frac{575 \div 5}{1080 \div 5} = \frac{115}{216} = 115:216$$

(b) Number of boys to the number of girls.

Ans.

No. of Students = 4320

No. of Girls = 2300

No. of Boys = 4320 – 2300 = 2020

$$\begin{aligned} \text{Ratio of Number of boys to the number of girls} &= \frac{2020}{2300} = \frac{2020 \div 2}{2300 \div 2} = \frac{1010 \div 2}{1150 \div 2} = \frac{505 \div 5}{575 \div 5} \\ &= \frac{101}{115} = 101:115 \end{aligned}$$

(c) Number of boys to the total number of students.

Ans.

No. of Students = 4320

No. of Girls = 2300

No. of Boys = 4320 – 2300 = 2020

$$\begin{aligned} \text{Ratio of Number of boys to the total number of students} &= \frac{2020}{4320} = \frac{2020 \div 2}{4320 \div 2} = \frac{1010 \div 2}{2160 \div 2} = \\ &= \frac{505 \div 5}{1080 \div 5} = \frac{101}{216} = 101:216 \end{aligned}$$

11. Out of 1800 students in a school, 750 opted basketball, 800 opted cricket and remaining opted table tennis. If a student can opt only one game, find the ratio of

(a) Number of students who opted basketball to the number of students who opted table tennis.

Ans.

Number of students = 1800

Students opted basketball = 750

Students opted Cricket = 800

Remaining opted table tennis = 1800 – (750 + 800) = 250

$$\begin{aligned} \text{Ratio of Number of students who opted basketball to the number of students who opted} \\ \text{table tennis} &= \frac{750}{250} = \frac{750 \div 250}{250 \div 250} \\ &= \frac{3}{1} = 3:1 \end{aligned}$$

(b) Number of students who opted cricket to the number of students opting basketball.

Ans.

Number of students = 1800

Students opted basketball = 750

Students opted Cricket = 800

Remaining opted table tennis = 1800 – (750 + 800) = 250

$$\begin{aligned} \text{Ratio of Number of students who opted cricket to the number of students opting} \\ \text{basketball} &= \frac{800}{750} = \frac{800 \div 50}{750 \div 50} = \frac{16}{15} = 16:15 \end{aligned}$$

(c) Number of students who opted basketball to the total number of students.

Ans.

Number of students = 1800

Students opted basketball = 750

Students opted Cricket = 800

Remaining opted table tennis = $1800 - (750 + 800) = 250$

Ratio of Number of students who opted basketball to the total number of students =

$$\frac{750}{1800} = \frac{750 \div 150}{1800 \div 150} = \frac{5}{12} = 5:12$$

12. Cost of a dozen pens is ₹180 and cost of 8 ball pens is ₹ 56. Find the ratio of the cost of a pen to the cost of a ball pen.

Ans.

Cost of 1 dozen (or 12 pens) = ₹ 180

Cost of 1 pen = $\frac{180}{12} = ₹15$

Cost of 8 ball pens = ₹ 56

Cost of 1 ball pens = $\frac{56}{8} = \text{Rs. } 7$

Ratio of the cost of a pen to the cost of a ball pen = $\frac{15}{7} = 15:7$

13. Consider the statement: Ratio of breadth and length of a hall is 2:5. Complete the following table that shows some possible breadths and lengths of the hall.

Breadth of the hall (in metres)	10		40
Length of the hall (in metres)	25	50	

Ans.

(i) Length of the hall (in metres) = 50m

Ratio of breadth and length of a hall = $2:5 = \frac{2}{5}$

By cross multiplication,

$$\frac{x}{50} = \frac{2}{5}$$

$$5x = 2 \times 50$$

$$5x = 100$$

$$x = \frac{100}{5} = 20m$$

(ii) Breadth of the hall (in metres) = 40cm

Ratio of breadth and length of a hall = $2:5 = \frac{2}{5}$

By cross multiplication,

$$\frac{40}{x} = \frac{2}{5}$$

$$2x = 5 \times 40$$

$$2x = 200$$

$$x = \frac{200}{2} = 100m$$

14. Divide 20 pens between Sheela and Sangeeta in the ratio of 3:2.

Ans.

Ratio = 3:2

Sum of the Ratio = $3+2 = 5$

Sheela will get $\frac{3}{5}$ th of the total pens and Sangeeta will get $\frac{2}{5}$ th of the total pens.

Number of pen with sheela = $\frac{3}{5} \times 20 = 12$ pens

Number of pen with sangeeta = $\frac{2}{5} \times 20 = 8$ pens

15. Mother wants to divide ₹ 36 between her daughters Shreya and Bhoomika in the ratio of their ages. If age of Shreya is 15 years and age of Bhoomika is 12 years, find how much Shreya and Bhoomika will get.

Ans.

Ratio of their ages = $\frac{15}{12}$ or $\frac{5}{4}$

Sum of their ages = $5+4 = 9$

Here, Shreya will get $\frac{5}{9}$ **th** of the total share, while Bhoomika will get $\frac{4}{9}$ **th** of the total share.

$$\text{Amount Shreya get} = \frac{5}{9} \times 36 = ₹ 20$$

$$\text{Amount Bhoomika get} = \frac{4}{9} \times 36 = ₹ 16$$

16. Present age of father is 42 years and that of his son is 14 years. Find the ratio of

(a) Present age of father to the present age of son.

Ans.

Given:

Present age of father = 42 years

Present age of his son = 14 years

$$\begin{aligned} \text{Ratio of Present age of father to the present age of son} &= \frac{42}{14} \\ &= \frac{42 \div 14}{14 \div 14} = \frac{3}{1} = 3:1 \end{aligned}$$

(b) Age of the father to the age of son, when son was 12 years old.

Ans.

Given:

Present age of father = 42 years

Present age of his son = 14 years

2 years ago,

Son age was = 12 years old

Father age was $42 - 2 = 40$ years

$$\text{Ratio of Age of the father to age of son 2 years ago} = \frac{40}{12} = \frac{40 \div 4}{12 \div 4} = \frac{10}{3} = 10:3$$

(c) Age of father after 10 years to the age of son after 10 years.

Ans.

Given:

Present age of father = 42 years

Present age of his son = 14 years

After 10 years,

Son age will be = $14 + 10 = 24$ years old

Father age will be = $42 + 10 = 52$ years

Ratio of Age of father after 10 years to the age of son after 10 years = $\frac{52}{24} = \frac{52 \div 4}{24 \div 4} = \frac{13}{6}$
= 13:6

(d) Age of father to the age of son when father was 30 years old.

Given:

Present age of father = 42 years

Present age of his son = 14 years

12 years ago, father age was 30 years old

12 years ago, son age was = $14 - 12 = 2$ years old

Ratio of Age of father to the age of son when father was 30 years old = $\frac{30}{2} = \frac{30 \div 2}{2 \div 2} = \frac{15}{1}$
= 15:1

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EXERCISE- 12.2

NCERT SOLUTION

1. Determine if the following are in proportion.

(a) 15, 45, 40, 120

Ans.

$$\frac{15}{45} = \frac{15 \div 15}{45 \div 15} = \frac{1}{3}$$

$$\frac{40}{120} = \frac{40 \div 40}{120 \div 40} = \frac{1}{3}$$

Hence $15:45 = 40:120$

\therefore They are in proportion

(b) 33, 121, 9, 96

Ans.

$$\frac{33}{121} = \frac{33 \div 11}{121 \div 11} = \frac{3}{11}$$

$$\frac{9}{96} = \frac{9 \div 3}{96 \div 3} = \frac{3}{32}$$

Hence $33:121 \neq 9:96$

\therefore They are not in proportion

(c) 24, 28, 36, 48

Ans.

$$\frac{24}{28} = \frac{24 \div 4}{28 \div 4} = \frac{6}{7}$$

$$\frac{36 \div 12}{48 \div 12} = \frac{3}{4}$$

Hence $24:28 \neq 36:48$

\therefore They are not in proportion.

(d) 32, 48, 70, 210

Ans.

$$\frac{32}{48} = \frac{32 \div 16}{48 \div 16} = \frac{2}{3}$$

$$\frac{70}{210} = \frac{70 \div 70}{210 \div 70} = \frac{1}{3}$$

Hence $32:48 \neq 70:210$

\therefore They are not in proportion

(e) 4, 6, 8, 12

Ans.

$$\frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

$$\frac{8}{12} = \frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

$4:6 = 8:12$

\therefore They are in proportion

(f) 33, 44, 75, 100

Ans.

$$\frac{33}{44} = \frac{33 \div 11}{44 \div 11} = \frac{3}{4}$$

$$\frac{75}{100} = \frac{75 \div 25}{100 \div 25} = \frac{3}{4}$$

$$33:44 = 75:100$$

∴ They are in proportion

2. Write True (T) or False (F) against each of the following statements:

(a) 16 : 24 :: 20 : 30

Ans.

$$16 : 24 :: 20 : 30$$

$$\text{Product of the extreme terms} = 16 \times 30 = 480$$

$$\text{Product of the middle terms} = 24 \times 20 = 480$$

∴ The given statement is True

(b) 21: 6 :: 35 : 10

Ans.

$$21: 6 :: 35 : 10$$

$$\text{Product of the extreme terms} = 21 \times 10 = 210$$

$$\text{Product of the middle terms} = 6 \times 35 = 210$$

∴ The given statement is True

(c) 12 : 18 :: 28 : 12

Ans.

$$12 : 18 :: 28 : 12$$

$$\text{Product of the extreme terms} = 12 \times 12 = 144$$

Product of the middle terms = $18 \times 28 = 504$

They are not in proportion.

∴ The given statement is False

(d) $8 : 9 :: 24 : 27$

Ans.

$8 : 9 :: 24 : 27$

Product of the extreme terms = $8 \times 27 = 216$

Product of the middle terms = $9 \times 24 = 216$

∴ The given statement is True

(e) $5.2 : 3.9 :: 3 : 4$

Ans.

$5.2 : 3.9 :: 3 : 4$

Product of the extreme terms = $5.2 \times 4 = 20.8$

Product of the middle terms = $3.9 \times 3 = 11.7$

They are not in proportion.

∴ The given statement is False

(f) $0.9 : 0.36 :: 10 : 4$

Ans.

$0.9 : 0.36 :: 10 : 4$

Product of the extreme terms = $0.9 \times 4 = 3.6$

Product of the middle terms = $0.36 \times 10 = 3.6$

∴ The given statement is True

3. Are the following statements true?

(a) 40 persons : 200 persons = ₹15 : ₹ 75

Ans.

40 persons : 200 persons

$$\frac{40}{200} = \frac{40 \div 40}{200 \div 40} = \frac{1}{5}$$

₹15 : ₹ 75

$$\frac{15}{75} = \frac{15 \div 15}{75 \div 15} = \frac{1}{5}$$

Statement (a) is True.

(b) 7.5 litres : 15 litres = 5 kg : 10 kg

Ans.

7.5 litres : 15 litres

$$\frac{7.5}{15} = \frac{75 \div 75}{150 \div 75} = \frac{1}{2}$$

5 kg : 10 kg

$$\frac{5}{10} = \frac{5 \div 5}{10 \div 5} = \frac{1}{2}$$

Statement (b) is True.

(c) 99 kg : 45 kg = ₹ 44 : ₹ 20

Ans.

99 kg : 45 kg

$$\frac{99}{45} = \frac{99 \div 9}{45 \div 9} = \frac{11}{5}$$

₹ 44 : ₹ 20

$$\frac{44}{20} = \frac{44 \div 4}{20 \div 4} = \frac{11}{5}$$

Statement (c) is True.

(d) 32 m : 64 m = 6 sec : 12 sec

Ans.

$$\frac{32 \text{ m}}{64} = \frac{32 \div 32}{64 \div 32} = \frac{1}{2}$$

$$6 \text{ sec} : 12 \text{ sec}$$

$$\frac{6}{12} = \frac{6 \div 6}{12 \div 6} = \frac{1}{2}$$

Statement (d) is True.

(e) 45 km : 60 km = 12 hours : 15 hours

Ans.

$$45 \text{ km} : 60 \text{ km}$$

$$\frac{45}{60} = \frac{45 \div 15}{60 \div 15} = \frac{3}{4}$$

$$12 \text{ hours} : 15 \text{ hours}$$

$$\frac{12}{15} = \frac{12 \div 3}{15 \div 3} = \frac{4}{5}$$

Statement (e) is not True.

4. Determine if the following ratios form a proportion. Also, write the middle terms and extreme terms where the ratios form a proportion.

(a) 25 cm : 1 m and ₹ 40 : ₹ 160

Ans.

$$25 \text{ cm} : 1 \text{ m}$$

$$1 \text{ m} = 100 \text{ cm}$$

$$25 \text{ cm} : 100 \text{ cm}$$

$$\frac{25}{100} = \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$$

$\text{₹ } 40 : \text{₹ } 160$

$$\frac{40}{160} = \frac{40 \div 40}{160 \div 40} = \frac{1}{4}$$

\therefore The given ratio are in proportion.
 Extreme terms are 25 cm and ₹ 160.
 Middle terms are 1 m and ₹ 40.

(b) 39 litres : 65 litres and 6 bottles : 10 bottles

Ans.

39 litres : 65 litres

$$\frac{39}{65} = \frac{39 \div 13}{65 \div 13} = \frac{3}{5}$$

6 bottles : 10 bottles

$$\frac{6}{10} = \frac{6 \div 2}{10 \div 2} = \frac{3}{5}$$

\therefore The given ratio are in proportion.
 Extreme terms are 39 litres and 10 bottles.
 Middle terms are 65 litres and 6 bottles.

(c) 2 kg : 80 kg and 25 g : 625 g

Ans.

2 kg : 80 kg

$$\frac{2}{80} = \frac{2 \div 2}{80 \div 2} = \frac{1}{40}$$

25 g : 625 g

$$\frac{25}{625} = \frac{25 \div 25}{625 \div 25} = \frac{1}{25}$$

Since, $\frac{1}{40} \neq \frac{1}{25}$

\therefore The given ratio are not in proportion.

(d) 200 mL : 2.5 litre and ₹ 4 : ₹ 50

Ans.

200 mL : 2.5 litre

1litre = 1000mL

2.5litre = 2500mL

200mL : 2500mL

$$\frac{200}{2500} = \frac{200 \div 100}{2500 \div 100} = \frac{2}{25}$$

₹ 4 : ₹ 50

$$\frac{4}{50} = \frac{4 \div 2}{50 \div 2} = \frac{2}{25}$$

∴ The given ratio are in proportion.

Extreme terms are 200mL and ₹ 50.

Middle terms are 2.5 litres and ₹ 4.

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EXERCISE- 12.3

NCERT SOLUTION

1. If the cost of 7 m of cloth is ₹ 1470, find the cost of 5 m of cloth.

Ans.

Using unitary method,

Cost of 7m cloth = ₹ 1470

$$\text{Cost of 1m cloth} = \frac{1470}{7} = ₹ 210$$

$$\text{So, cost of 5m cloth} = 210 \times 5 = ₹ 1050$$

Thus the cost of 5m cloth = ₹ 1050

2. Ekta earns ₹ 3000 in 10 days. How much will she earn in 30 days?

Ans.

Money earn by Ekta in 10 days = ₹ 3000

Money earn by Ekta in 1 day = $\frac{3000}{10} = ₹ 300$

So, Money earn by Ekta in 30 days = $300 \times 30 = ₹ 9000$

Thus, money earned by Ekta in 30 days = ₹ 9000

3. If it has rained 276 mm in the last 3 days, how many cm of rain will fall in one full week (7 days)? Assume that the rain continues to fall at the same rate.

Ans.

Rain in 3 days = 276 mm

Rain in 1 day = $\frac{276}{3} = 92$ mm

Rain in 7 days = $92 \times 7 = 644$ mm.

4. Cost of 5 kg of wheat is ₹ 91.50.

(a) What will be the cost of 8 kg of wheat?

(b) What quantity of wheat can be purchased in ₹183?

Ans.

(a) Cost of 5 kg of wheat = ₹ 91.50

Cost of 1 kg of wheat = $\frac{91.50}{5} = ₹ 18.30$

Cost of 8 kg of wheat = $18.30 \times 8 = ₹ 146.4$

Thus, the cost of 8 kg wheat = ₹ 146.4

(b) From ₹ 91.50 Quantity of wheat purchased = 5kg

From ₹ 1 quantity of wheat purchased = $\frac{5}{91.50}$

From ₹ 183 Quantity of wheat purchased = $\frac{5}{91.50} \times 183 = \frac{915}{91.50} = 10\text{kg}$

Thus, 10kg wheat can be purchased with ₹183.

5. The temperature dropped 15 degree celsius in the last 30 days. If the rate of temperature drop remains the same, how many degrees will the temperature drop in the next ten days?

Ans.

Degree of temperature dropped in last 30 days = 15°

Degree of temperature dropped in 1 day = $\frac{15}{30} = \frac{1}{2}$

Degree of temperature dropped in next ten days = $\frac{1}{2} \times 10 = 5^\circ$

Thus, 5 degree Celsius temperature dropped in next ten days.

6. Shaina pays ₹15000 as rent for 3 months. How much does she has to pay for a whole year, if the rent per month remains same?

Ans.

Rent paid for 3 months = ₹ 15,000

Rent paid for 1month = $\frac{15,000}{3} = ₹ 5,000$

Rent paid for whole year (12 month) = $5000 \times 12 = ₹ 60,000$

Thus, Total Rent paid for 1 year = ₹ 60,000

7. Cost of 4 dozen bananas is ₹180. How many bananas can be purchased for ₹ 90?

Ans.

1 dozen = 12 bananas.

4 dozen = $4 \times 12 = 48$ bananas

For ₹180 number of bananas purchased = 48 bananas.

$$\text{For ₹1 number of bananas purchased} = \frac{48}{180} = \frac{48 \div 12}{180 \div 12} = \frac{4}{15}$$

$$\text{For ₹90 number of bananas purchased} = \frac{4}{15} \times 90 = 24 \text{ bananas}$$

8. The weight of 72 books is 9 kg. What is the weight of 40 such books?

Ans.

$$\text{Weight of 72 books} = 9 \text{ kg}$$

$$\text{Weight of 1 book} = \frac{9}{72} = \frac{9 \div 9}{72 \div 9} = \frac{1}{8}$$

$$\text{Weight of 40 books} = \frac{1}{8} \times 40 = 5 \text{ kg}$$

9. A truck requires 108 litres of diesel for covering a distance of 594 km. How much diesel will be required by the truck to cover a distance of 1650 km?

Ans.

$$\text{For covering 594 km quantity of diesel required} = 108 \text{ litre}$$

$$\text{For covering 1km quantity of diesel required} = \frac{108}{594} = \frac{108 \div 54}{594 \div 54} = \frac{2}{11}$$

$$\text{For covering 1650km quantity of diesel required} = \frac{2}{11} \times 1650 = 300 \text{ litre}$$

Thus, A truck requires 300 litres of diesel to cover a distance of 1650km.

10. Raju purchases 10 pens for ₹150 and Manish buys 7 pens for ₹ 84. Can you say who got the pens cheaper?

Ans.

$$\text{Raju purchase 10 pens for} = ₹ 150$$

$$\text{Cost of 1 pen} = \frac{150}{10} = ₹ 15$$

$$\text{Manish purchase 7 pens for} = ₹ 84$$

$$\text{Cost of 1 pen} = \frac{84}{7} = ₹ 12$$

Here, Manish got the pen cheaper.

11. Anish made 42 runs in 6 overs and Anup made 63 runs in 7 overs. Who made more runs per over?

Ans.

Anish made in 6 overs = 42 runs

$$\text{Anish made in 1 over} = \frac{42}{6} = 7 \text{ runs}$$

Anup made in 7 overs = 63 runs

$$\text{Anup made in 1 overs} = \frac{63}{7} = 9 \text{ runs}$$

Thus, Anup made more runs per over.

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