



## Chapter : 8

### Comparing Quantities

#### SOLUTIONS:

##### Exercise 8.1

1. Find the ratio of:

a. ₹ 5 to 50 paise

Sol<sup>n</sup>. ₹ 1 = 100 paise

₹ 5 = (100 × 5) paise

= 500 paise

$$\text{Here, } \frac{500}{50} = \frac{\cancel{500}^{\cancel{100}}}{\cancel{50}_1} = \frac{10}{1}$$
$$= 10 : 1$$

b. 15kg to 210g

Sol<sup>n</sup>. 1kg = 1000g

15kg = (1000 × 15)g

= 15000g

$$\text{Here, } \frac{15000}{210} = \frac{\cancel{15000}^{\cancel{500}}}{\cancel{210}_7} = \frac{500}{7}$$
$$= 500 : 7$$



c. 9m to 27cm

Sol<sup>n</sup>. 1m = 100cm

$$9\text{m} = 100\text{cm}$$

$$= 900\text{cm}$$

$$\text{Here, } \frac{900}{27} = \frac{\cancel{900}^{\cancel{100}}}{\cancel{27}_3} = \frac{100}{3}$$

$$= 100 : 3$$

d. 30 days to 36 hours

Sol<sup>n</sup>. 1 days = 24 hours

$$30 \text{ days} = (24 \times 30) \text{ hours}$$

$$= 720 \text{ hours}$$

$$\text{Here, } \frac{720}{36} = \frac{\cancel{720}^{\cancel{240}}}{\cancel{36}_{12}} = \frac{\cancel{20}^{\cancel{40}}}{\cancel{2}_1} = \frac{20}{1}$$

$$= 20 : 1$$

Q2. In a computer lab, there are 3 computers for every 6 student. How many computer will be need for 24 students.

Sol<sup>n</sup>. No. of computer for 6 students = 3

$$\text{No. of computer for 1 students} = \frac{3}{6} = \frac{1}{2}$$

$$= 1 : 2$$

$$\text{No. of computer for 24 students} = \frac{\cancel{3}}{\cancel{6}_1} \times \cancel{24}^4 \text{ or } \frac{1}{\cancel{2}} \times \cancel{24}^{12}$$

$$= 3 \times 4 \text{ or } 12$$

$$= 12 \text{ or } 12$$

∴ Computer needed for 24 students = 12 numbers.

Q3. Population of Rajasthan = 570 lakhs and population of U.P = 1660 lakhs. Area of Rajasthan = 3 lakhs km<sup>2</sup> and area of U.P = 2 lakhs km<sup>2</sup>.

(i) How many people are there per km<sup>2</sup> in both these states ?

Sol<sup>n</sup>. For Rajasthan

Population = 570 lakhs

Area = 3 lakh km<sup>2</sup>

$$\therefore \text{No. of people per km}^2 = \frac{570}{3} \times \frac{190}{1} \\ = 190 \text{ people.}$$

And, For U.P

Population = 1660 lakhs

Area = 2 lakhs km<sup>2</sup>

$$\therefore \text{No. of people per km}^2 = \frac{1660}{2} \times \frac{830}{1} \\ = 830 \text{ people.}$$

(ii) Which state is less populated

Here, 830 > 190

So, Rajasthan is less populated.



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## Exercise 8.2

1. Convert the given fraction number to percents.

a.  $\frac{1}{8}$

Sol<sup>n</sup>.  $\frac{1}{8}$  Percent

$$= \frac{1}{8} \times 100$$

$$= \frac{\cancel{100}^{\cancel{50}} \cancel{25}}{\cancel{8}_4 \cancel{2}} = \frac{25}{2}$$

$$= 12.5\%$$

b.  $\frac{5}{4}$

Sol<sup>n</sup>.  $\frac{5}{4} \times 100$

$$= \frac{500}{4}$$

$$= \frac{125}{1}$$

$$= 125\%$$

c.  $\frac{3}{40}$

Sol<sup>n</sup>.  $\frac{3}{40} \times 100$

$$= \frac{\cancel{30}^{\cancel{15}}}{\cancel{4}_2} = \frac{15}{2}$$

$$= 7.5\%$$



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d.  $\frac{2}{7}$

Sol<sup>n</sup>.  $\frac{2}{7} \times 100$

$= \frac{200}{7}$

$= 28\frac{4}{7}\%$

Q2. Convert the given decimal fractions to per cents.

a. 0.65

Sol<sup>n</sup>. 0.65

$= 0.65 \times 100\%$

$= \frac{65}{100} \times 100\%$

$= 65\%$

b. 2.1

Sol<sup>n</sup>.  $2.1 \times 100\%$

$= \frac{21}{10} \times 100\%$

$= 21 \times 10\%$

$= 210\%$

c. 0.02

Sol<sup>n</sup>. 0.02

$= 0.02 \times 100\%$

$= \frac{2}{100} \times 100\%$

$= 2\%$



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d. 12.35

Sol<sup>n</sup>. 12.35

$$= 12.35 \times 100\%$$

$$= \frac{1235}{100} \times 100\%$$

$$= 1235\%$$

Q3. Estimate – What part of the figures is coloured and hence find percent which is coloured.

(i)



Sol<sup>n</sup>.  $\frac{1}{4}$  parts of the figure is coloured

$$= \frac{1}{4} \times 100\%$$

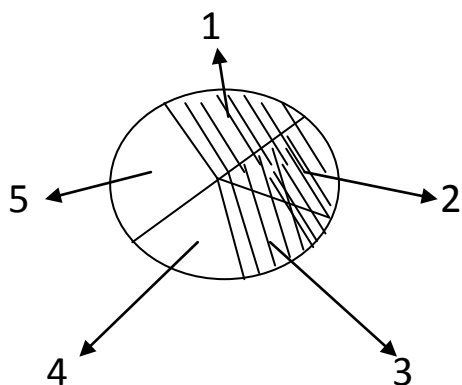
$$= \frac{100}{4} \times 1\%$$

$$= 25\%$$



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(ii)



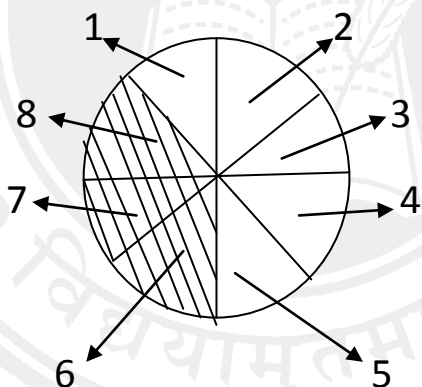
Sol<sup>n</sup>.  $\frac{3}{5}$  part of the figure coloured

$$= \frac{3}{5} \times 100\%$$

$$= (3 \times 20)$$

$$= 60\%$$

(iii)



Sol<sup>n</sup>.  $\frac{3}{8}$  part of the figure is coloured

$$= \frac{3}{8} \times 100\%$$

$$= \frac{3 \times 100}{8} \%$$

$$= \frac{3 \times 25}{2} \%$$

$$= \frac{75}{2} \%$$

Q4. Find

a. 15 % of 250

$$= \frac{15}{100} \times \frac{3}{2} \text{ of } 250$$

$$= \frac{3 \times 25}{2}$$

$$= \frac{75}{2}$$

$$= 37.5$$

b. 1% of 1 hour

Sol<sup>n</sup>. 1% of 1 hour

$$= \frac{1}{100} \times 60 \text{ min } [ \because 1 \text{ hr} = 60 \text{ min} ]$$

$$= \frac{6}{10} \times \frac{3}{5}$$

$$= \frac{3}{5} \text{ min}$$

c. 20%

Sol<sup>n</sup>. 20% of ₹ 2500

$$= \frac{20}{100} \times 2500$$

$$= 20 \times 25$$

$$= 500$$

$$= ₹ 500$$



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d. 75% of 1kg

Sol<sup>n</sup>. 75% of 1 kg

$$= \frac{75}{100} \times 1$$

$$= \frac{75}{100}$$

$$= 0.75 \text{ kg}$$

Q5. Find the whole quantity if

a. 5% of it is 600

Sol<sup>n</sup>. 5 % of  $x = 600$

Let  $x$  be the whole Quantity

$$\Rightarrow 5\% \text{ of } x = 600$$

$$\Rightarrow \frac{5}{100} \times x = 600$$

$$\Rightarrow \frac{5x}{100} = 600$$

$$\Rightarrow 5x = 600 \times 100$$

$$\Rightarrow 5x = \frac{600 \times 100}{5} = 600 \times 20$$

$\therefore$  Whole quantity is 1200

b. 12% of it is Rs 1080

Sol<sup>n</sup>. = 12% of it is Rs 1080

$$\Rightarrow 12\% \text{ of } x = 1080$$

$$\Rightarrow \frac{12x}{100} = 1080$$

$$\Rightarrow 12x = 1080 \times 100$$

$$\Rightarrow x = \frac{\cancel{1080} \ 360 \times \cancel{100} \ \cancel{50} \ 25}{\cancel{12} \ \cancel{6} \ \cancel{3} \ 1}$$

$$= 360 \times 25$$

$$x = 9000$$

$\therefore$  whole quantity = Rs 9000

c. 40% of it is 500 km

Sol<sup>n</sup>. 40% of it is 500km

$$\Rightarrow 40\% \text{ of } x = 500$$

$$\Rightarrow \frac{40x}{100} = 500$$

$$\Rightarrow 40x = 500 \times 100$$

$$\Rightarrow x = \frac{\cancel{500} \ \cancel{250} \times \cancel{100} \ 5}{\cancel{40} \ \cancel{2} \ 1} = 250 \times 5$$

$$\therefore x = 1250$$

$\therefore$  Whole quantity = 1250 km.

d. 70% of it is 14 minutes

Sol<sup>n</sup>. 70% of it is 14 min

$$\Rightarrow 70\% \text{ of } x = 14$$

$$\Rightarrow \frac{70x}{100} = 14$$

$$\Rightarrow 70x = 14 \times 100$$

$$\Rightarrow x = \frac{\cancel{14} \ 2 \times \cancel{100}}{\cancel{70} \ 1} = 2 \times 10$$

$$\therefore x = 20 \text{ min}$$

$\therefore$  Whole quantity = 20 min

e. 8% of it is 40 liters

Sol<sup>n</sup>. 8% of it is 40 liters

$$\Rightarrow 8\% \text{ of } x = 40$$

$$\Rightarrow \frac{8x}{100} = 40$$

$$\Rightarrow 8x = 40 \times 100$$

$$\Rightarrow x = \frac{40 \cancel{5} \times 100}{\cancel{8} 1} = 5 \times 100$$

$$\therefore x = 500L$$

$$\therefore \text{whole quantity} = 500L$$

Q6. Convert given percents to decimals fraction and also to fractions in simplest forms.

a. 25%

Sol<sup>n</sup>. 25%

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

$$= \frac{1}{4}$$

$$= \frac{1}{4} \text{ or } 0.25$$

b. 150%

Sol<sup>n</sup>. 150%

$$= \frac{\cancel{150} 3}{\cancel{100} 2}$$

$$= \frac{3}{2}; 1.5$$



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c. 20%

Sol<sup>n</sup>. 20%

$$= \frac{20}{100} \times \frac{1}{5}$$

$$= \frac{1}{5}$$

$$= \frac{1}{5}; 0.2$$

d. 5%

Sol<sup>n</sup>. 5%

$$= \frac{5}{100} \times \frac{1}{20}$$

$$= \frac{1}{20}$$

$$= \frac{1}{20}; 0.05$$

Q7. In a city, 30% are female; 40% males and remaining are children. What percent are children?

Sol<sup>n</sup>. In a city,

Percentage of females = 30%

Percentage of males = 40%

Total = 30+40

= 70%

∴ Percentage of children = (100-70)%

= 30%



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Q8. Out of 15,000 votes in a constituency, 60% voted. Find the percentages of voters who did not vote. Can you now find how many actually did not vote?

Sol<sup>n</sup>. Percentage of voters who voted = 60%

Percentages of voters who did not vote = (100-60)%

∴ P.C of voters who did not vote = 40%

Then,

∴ No. of voter who did not vote = 40% of 15000

$$= \frac{40}{100} \times 15000$$

$$= 40 \times 150$$

$$= 6000 \text{ voters.}$$

Q9. Meeta saves Rs. 4000 from salary. If this is 10% of her salary. What is her salary?

Sol<sup>n</sup>: Given,

Meeta's saving = Rs.4000 = 10% of her salary

Let x be the salary

Then,

$$10\% \text{ of her salary} = 4000$$

$$\Rightarrow 10\% \text{ of } x = 4000$$

$$\Rightarrow \frac{10x}{100} = 4000$$

$$\Rightarrow 10x = 4000 \times 100$$

$$\Rightarrow x = \frac{4000 \times 100}{10}$$

$$\Rightarrow x = 40000$$

$\therefore$  Her salary is Rs.40,000.

Q10. A local cricket team played 20 matches in one season. It won 25% of them. How many matches did they win?

Sol<sup>n</sup>: Given,

Number of matches played in one season = 20

Matches won = 25%

Let x be the matches they win

Then,

Won = 25% of the total matches

$$\Rightarrow x = 25\% \text{ of } 20$$

$$\Rightarrow x = \frac{25}{100} \times 20$$

$$= \frac{25 \times 20}{100}$$

$$= 5$$

$\therefore$  Number of matches they won is 5 matches.

### Exercise 8.3

Q1. Tell what is the profit or loss in the following transaction. Also find profit per cent or loss percent in each case.

(a) Gardening shears bought for Rs. 250 and sold for Rs. 325

$$\text{Sol}^n: \text{CP} = \text{Rs. } 250$$

$$\text{SP} = \text{Rs. } 325$$

Here,  $\text{SP} > \text{CP}$

$$\begin{aligned}\therefore \text{Profit} &= \text{SP} - \text{CP} \\ &= \text{Rs. } (325 - 250) \\ &= \text{Rs. } 75\end{aligned}$$

$$\begin{aligned}\text{Profit} &= \frac{\text{Profit}}{\text{CP}} \times 100 \\ &= \frac{75}{250} \times 100 \\ &= \frac{15}{5} \times 10^2 \\ &= 15 \times 2 \\ &= 30\end{aligned}$$

(b) A refrigerator bought for Rs. 12,000 and sold at Rs. 13,500

$$\text{Sol}^n: \text{CP} = \text{Rs. } 12,000$$

$$\text{SP} = \text{Rs. } 13,500$$

Here,  $\text{SP} > \text{CP}$

$$\begin{aligned}\therefore \text{Profit} &= \text{Rs. } (13,500 - 12,000) \\ &= \text{Rs. } 1,500\end{aligned}$$

$$\begin{aligned}\text{Profit \%} &= \frac{\text{Profit}}{\text{CP}} \times 100 \\ &= \frac{1500}{12000} \times 100 \\ &= \frac{25}{2} \\ &= 12.5\end{aligned}$$



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(c) A cupboard bought for Rs. 2500 and sold at Rs. 3000

$$\text{Sol}^n: \text{CP} = \text{Rs. } 2,500$$

$$\text{SP} = \text{Rs. } 3,000$$

Here,  $\text{SP} > \text{CP}$

$$\begin{aligned}\therefore \text{Profit} &= \text{SP} - \text{CP} \\ &= \text{Rs. } (3000 - 2500) \\ &= \text{Rs. } 500\end{aligned}$$

$$\begin{aligned}\text{Profit \%} &= \frac{\text{Profit}}{\text{CP}} \times 100 \\ &= \frac{500}{2500} \times 100 \\ &= 20\end{aligned}$$

(d) A skirt bought for Rs. 250 and sold Rs. 150

$$\text{Sol}^n: \text{CP} = \text{Rs. } 250$$

$$\text{SP} = \text{Rs. } 150$$

Here,  $\text{CP} > \text{SP}$

$$\begin{aligned}\therefore \text{Loss} &= \text{CP} - \text{SP} \\ &= \text{Rs. } (250 - 150) \\ &= \text{Rs. } 100\end{aligned}$$

$$\begin{aligned}\text{Loss\%} &= \frac{\text{Loss}}{\text{CP}} \times 100 \\ &= \frac{100}{250} \times 100 \\ &= 4 \times 10 \\ &= 40\end{aligned}$$



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Q2. Convert each part of the ratio percentage

(a) 3 : 1

Sol<sup>n</sup>: 3 : 1

Now,  $3 + 1 = 4$  is the total part

Then,

$$\begin{aligned}\text{Percentage of } \frac{3}{4} &= \frac{3}{4} \times 100\% \\ &= \frac{3}{4} \times 100\% \\ &= (3 \times 25)\% \\ &= 75\%\end{aligned}$$

And

$$\begin{aligned}\text{Percentage of } \frac{1}{4} &= \frac{1}{4} \times 100\% \\ &= \frac{1}{4} \times 100\% \\ &= (1 \times 25)\% \\ &= 25\%\end{aligned}$$

(b) 2 : 3 : 5

Sol<sup>n</sup>: 2 : 3 : 5

Now,  $2 + 3 + 5 = 10$  is the total of all parts

$$2 : 3 : 5 = \frac{2}{10} : \frac{3}{10} : \frac{5}{10}$$

Then,

$$\begin{aligned}\text{Percentage of each term} &= \frac{2}{10} \times 100\% \\ &= 2 \times 10 \\ &= 20\%\end{aligned}$$

$$= \frac{3}{10} \times 100\%$$

$$= 3 \times 10$$

$$= 30\%$$

$$= \frac{5}{10} \times 100\%$$

$$= 5 \times 10$$

$$= 50\%$$

(c) 1 : 4

Sol<sup>n</sup>: 1 : 4

Now, 1 + 4 = 5 is the total parts

$$1 : 4 = \frac{1}{5} : \frac{4}{5}$$

$$\begin{aligned}\text{Then, \% of each term} &= \frac{1}{5} \times 100 \\ &= 20\%\end{aligned}$$

$$\begin{aligned}&= \frac{4}{5} \times 100 \\ &= 4 \times 20\% \\ &= 80\%\end{aligned}$$

(d) 1 : 2 : 5

Sol<sup>n</sup>: 1 : 2 : 5

Now, 1 + 2 + 5 = 8

$$1 : 2 : 5 = \frac{1}{8} : \frac{2}{8} : \frac{5}{8}$$

Then,

$$\begin{aligned}\text{Percentage of each terms} &= \frac{1}{8} \times 100 \\ &= \frac{1}{8} \times 100 \\ &= \frac{25}{2} \% \\ &= 12.5 \%\end{aligned}$$

$$\begin{aligned}&= \frac{2}{8} \times 100 \\ &= \frac{2}{8} \times 100 \\ &= \frac{2 \times 25}{2} \% \\ &= 25 \%\end{aligned}$$

$$\begin{aligned}&= \frac{5}{8} \times 100 \\ &= \frac{5}{8} \times 100 \\ &= \frac{5 \times 25}{2} \% \\ &= \frac{125}{2} \% \\ &= 62.5 \%\end{aligned}$$

Q3. The population of a city decreased from 25000 to 24500. Find percentage decrease.

Sol<sup>n</sup>: Given,

Original population = 25000

Latest population = 24500

So,

$$\begin{aligned}\text{Decrease in population} &= (25000 - 24500) \\ &= 500\end{aligned}$$

Then,

$$\begin{aligned}\text{Percentage decrease} &= \frac{\text{change in population}}{\text{original population}} \times 100 \\ &= \frac{500}{25000} \times 100 \\ &= 2\%\end{aligned}$$

∴ The percentage decrease is 2%

Q4. Arun bought a car for Rs. 3, 50,000. The next year the price went up to Rs. 3, 70,000. What was the percentage of price increase?

Sol<sup>n</sup>: Given,

Arun bought a car for = Rs. 3, 50,000

The increase price = Rs. 3, 70,000

Increase in price = Rs. (370000 - 350000)  
= Rs. 20,000

$$\begin{aligned}\therefore \text{Percentage increase} &= \frac{\text{amount change}}{\text{original amount}} \times 100 \\ &= \left( \frac{20000}{350000} \times 100 \right) \\ &= \frac{40}{7}\end{aligned}$$

$$= 5\frac{5}{7} \%$$

Q5. I buy T.V. for Rs. 10,000 and sell it at a profit of 20%. How much money do I get for it?

Sol<sup>n</sup>: Given,

$$\text{CP of T.V.} = \text{Rs.10,000}$$

$$\text{Profit\%} = 20\%$$

Now,

$$\text{Profit} = \text{Profit\%} \times \text{CP}$$

$$= 20\% \times 10,000$$

$$= \frac{20}{100} \times 10000$$

$$= 20 \times 100$$

$$= \text{Rs.2000}$$

Then,

$$\text{SP} = \text{CP} + \text{Profit}$$

$$= 10000 + 2000$$

$$= 12000$$

∴ Money I get for it is Rs.12,000

Q6. Juhi sells a washing machine for Rs.13,500. She losses 20% in the bargain. What was the price at which she bought it.

Sol<sup>n</sup>: Given,

$$\text{SP} = \text{Rs.13,500}$$

$$\text{Loss\%} = 20\%$$

Now,

$$\text{Loss} = \text{Loss\%} \times 13500$$

$$= 20\% \times 13500$$

$$= \frac{20}{100} \times 13500$$

$$= 20 \times 135$$

$$= 2700$$

$$\therefore \text{Loss} = \text{Rs.} 2,700$$

Then,

$$\text{Loss} = \text{CP} - \text{SP}$$

$$\Rightarrow \text{CP} - \text{SP} = \text{Loss}$$

$$\Rightarrow \text{CP} = \text{Loss} + \text{SP}$$

$$= 2700 + 13500$$

$$= 16200$$

$$\therefore \text{The price was bought at Rs.} 16,200$$

Q7. (i) Chalk contains calcium, carbon, and oxygen in the ratio 10: 3: 12.  
Find the percentage of carbon in chalk.

Sol<sup>n</sup>: Given,

$$10 : 3 : 12$$

Now,  $10 + 3 + 12 = 25$  is the total of all parts

$$10: 3: 12 = \frac{10}{25} : \frac{3}{25} : \frac{12}{25}$$

$$\text{Calcium contain in chalk} = \frac{10}{25}$$

$$\text{Carbon contain in chalk} = \frac{3}{25}$$

$$\text{Oxygen contain in chalk} = \frac{12}{25}$$

Then,

$$\begin{aligned}\text{The percentage of carbon in chalk} &= \frac{3}{25} \times 100 \\ &= 3 \times 4 \\ &= 12\end{aligned}$$

$$\therefore \text{Percentage} = 12\%$$

(ii) If in a stick of chalk, carbon is 3g. What is the weight of the chalk?

Sol<sup>n</sup>: Given,

$$10 : 3 : 12$$

$$\text{Weight of the carbon} = 3\text{g}$$

Then,

$$\text{Weight of the oxygen} = 10\text{g}$$

$$\text{Weight of oxygen} = 12\text{g}$$

$$\begin{aligned}\therefore \text{Weight of the chalk stick} &= (3 + 10 + 12)\text{g} \\ &= 25\text{g}\end{aligned}$$

Q8. Amina buys book for Rs.275 and sells it at a loss of 15%. How much does she sell it for?

Sol<sup>n</sup>: Given,

$$\text{CP of a book} = \text{Rs.}275$$

$$\text{Loss\%} = 15\%$$

Then,

$$\begin{aligned}\text{Loss} &= \text{loss\%} \times \text{CP} \\ &= 15\% \times \text{CP} \\ &= \frac{15}{100} \times 275 \\ &= \frac{15 \times 11}{4}\end{aligned}$$

$$= \frac{165}{4} = 41.25$$

$$= \text{Rs.} 41.25$$

Here,

$$\text{SP} = \text{CP} - \text{Loss}$$

$$= \text{Rs.}(275 - 41.25)$$

$$= \text{Rs.} 233.75$$

$\therefore$  She sell it for Rs.233.75

Q9. Find the amount to be paid at the end of 3 years in each case

(a) Principal = 1,200 at 12% p.a.

Sol<sup>n</sup>:

Given,

$$\text{Principal} = \text{Rs.} 1,200$$

$$\text{Time} = 3 \text{ years}$$

$$\text{Rate} = 12\%$$

$$\begin{aligned} \text{Interest} &= \frac{PRT}{100} \\ &= \frac{1200 \times 12 \times 3}{100} \\ &= 12 \times 12 \times 3 \\ &= 432 \end{aligned}$$

$$\text{Interest} = \text{Rs.} 432$$

Then,

$$\text{Amount} = \text{Principal} + \text{Interest}$$

$$= 1200 + 432$$

$$= 1632$$

$\therefore$  Amount to be paid at the end of 3 years is Rs.1,632

(b) Principal = Rs.7500 at 5% p.a.

Sol<sup>n</sup>: Given,

$$\text{Principal} = \text{Rs.} 7500$$

$$\text{Rate} = 5\%$$

$$\text{Time} = 3 \text{ years}$$

$$\therefore \text{Interest} = \frac{PRT}{100}$$

$$= \frac{7500 \times 5 \times 3}{100}$$

$$= 75 \times 5 \times 3$$

$$= 1125$$

$$\therefore \text{Interest} = \text{Rs.}1,125$$

Then,

$$\begin{aligned} \text{Amount} &= \text{Principal} + \text{Interest} \\ &= 7500 + 1125 \\ &= \text{Rs.}8,625 \end{aligned}$$

$\therefore$  Amount to be paid at the end of 3 years is Rs.8,625.

Q10. What rate gives Rs.280 as interest in sum of Rs.56000 in 2 years?

Sol<sup>n</sup>: Given,

$$\text{Interest} = \text{Rs.}280$$

$$\text{Principal} = \text{Rs.}56000$$

$$\text{Time} = 2 \text{ years}$$

Here,

$$\begin{aligned} \text{Interest} &= \frac{PRT}{100} \\ \Rightarrow 280 &= \frac{56000 \times R \times 2}{100} \end{aligned}$$

$$\Rightarrow 56000 \times R \times 2 = 280 \times 100$$

$$\Rightarrow R = \frac{14 \times 280 \times 100}{56000 \times 2}$$

$$= \frac{14 \times 7}{56 \times 28}$$

$$= 0.25$$

$$\therefore \text{Rate} = 0.25\%$$

Q11. If Meena gives an interest of Rs.45 for one year at 9% rate p.a. What is the sum she has borrowed?

Sol<sup>n</sup>: Given,

$$\text{Interest} = 45$$



$$\text{Rate} = 9\%$$

$$\text{Time} = 1 \text{ year}$$

Then,

$$\text{Interest} = \frac{PRT}{100}$$

$$\Rightarrow 45 = \frac{P \times 9 \times 1}{100}$$

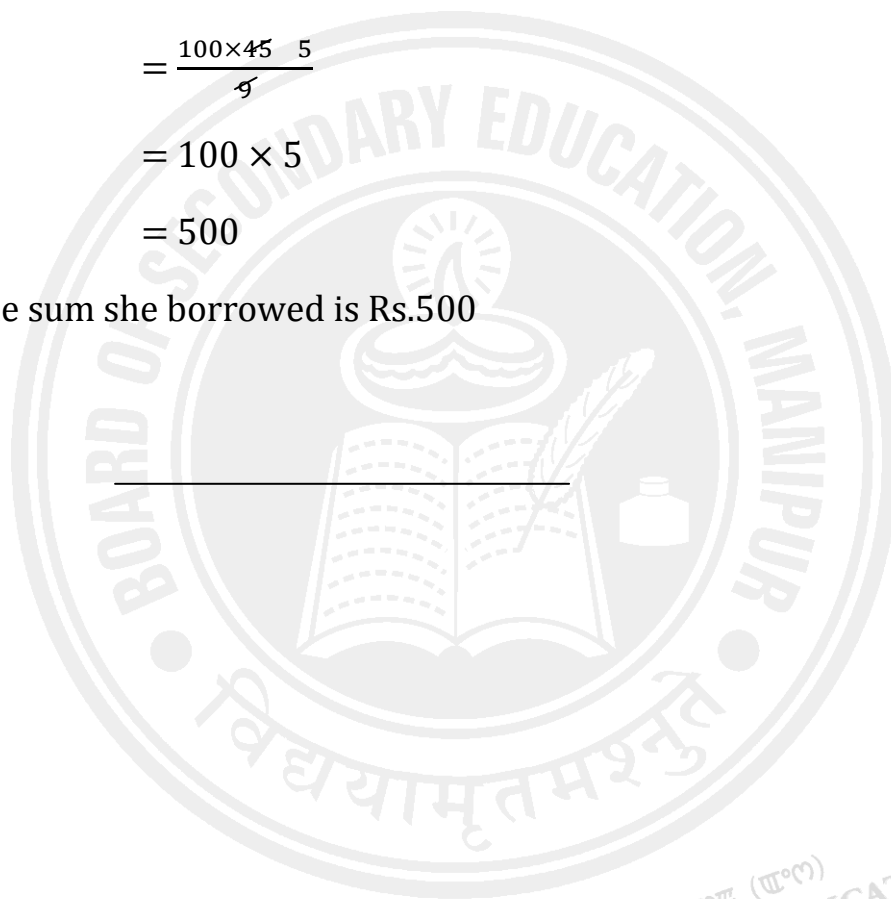
$$\Rightarrow P \times 9 = 100 \times 45$$

$$\Rightarrow P = \frac{100 \times 45}{9}$$

$$= 100 \times 5$$

$$= 500$$

$\therefore$  The sum she borrowed is Rs.500



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