Exercise 8.3

Question 1:

Tell what is the profit or loss in the following transactions. Also find profit percent or loss percent in each case.

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

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

(c) A cupboard bought for ₹ 2,500 and sold at ₹ 3,000.

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

Answer 1:

(a) Cost price of gardening shears = ₹ 250

Selling price of gardening shears = ₹ 325

Since, S.P. > C.P., therefore here is profit.

$\therefore$ Profit = S.P. – C.P. = ₹325 – ₹250 = ₹ 75

Now $\text{Profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100$

$= \frac{75}{250} \times 100 = 30\%$

Therefore, Profit = ₹75 and Profit% = 30%

(b) Cost price of refrigerator = ₹ 12,000

Selling price of refrigerator = ₹13,500

Since, S.P. > C.P., therefore here is profit.

$\therefore$ Profit = S.P. – C.P. = ₹13500 – ₹12000 = ₹1,500

Now $\text{Profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100$

$= \frac{1500}{12000} \times 100 = 12.5\%$

Therefore, Profit = ₹1,500 and Profit% = 12.5%

(c) Cost price of cupboard = ₹ 2,500

Selling price of cupboard = ₹ 3,000

Since, S.P. > C.P., therefore here is profit.

$\therefore$ Profit = S.P. – C.P. = ₹3,000 – ₹2,500 = ₹ 500

Now $\text{Profit\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100$

$= \frac{500}{2500} \times 100 = 20\%$

Therefore, Profit = ₹ 500 and Profit% = 20%

(d) Cost price of skirt = ₹ 250
Selling price of skirt = ₹ 150
Since, C.P. > S.P., therefore here is loss.
$\therefore$ Loss = C.P. – S.P. =₹250 – ₹150 = ₹100

Now Loss% = $\frac{\text{Loss}}{\text{C.P.}} \times 100$

$= \frac{100}{250} \times 100 = 40\%$

Therefore, Profit = ₹ 100 and Profit% = 40%

Question 2:

Convert each part of the ratio to percentage:

(a) 3 : 1 (b) 2 : 3 : 5 (c) 1 : 4 (d) 1 : 2 : 5

Answer 2:

(a) 3 : 1
Total part = 3 + 1 = 4

Therefore, Fractional part = $\frac{3}{4} : \frac{1}{4}$

$\Rightarrow$ Percentage of parts = $\frac{3}{4} \times 100 : \frac{1}{4} \times 100$

$\Rightarrow$ Percentage of parts = 75% : 25%

(b) 2 : 3 : 5
Total part = 2 + 3 + 5 = 10

Therefore, Fractional part = $\frac{2}{10} : \frac{3}{10} : \frac{5}{10}$

$\Rightarrow$ Percentage of parts = $\frac{2}{10} \times 100 : \frac{3}{10} \times 100 : \frac{5}{10} \times 100$

$\Rightarrow$ Percentage of parts = 20% : 30% : 50%

(c) 1 : 4
Total part = 1 + 4 = 5

Therefore, Fractional part = $\frac{1}{5} : \frac{4}{5}$

$\Rightarrow$ Percentage of parts = $\frac{1}{5} \times 100 : \frac{4}{5} \times 100$

$\Rightarrow$ Percentage of parts = 20% : 80%

(d) 1 : 2 : 5

Total part = 1 + 2 + 5 = 8

Therefore, Fractional part = $\frac{1}{8}:\frac{2}{8}:\frac{5}{8}$

$\Rightarrow$ Percentage of parts = $\frac{1}{8}\times 100:\frac{2}{8}\times 100:\frac{5}{8}\times 100$

$\Rightarrow$ Percentage of parts = 12.5% : 25% : 62.5%

Question 3:

The population of a city decreased from 25,000 to 24,500. Find the percentage decrease.

Answer 3:

The decreased population of a city from 25,000 to 24,500.

Population decreased = 25,000 – 24,500 = 500

Decreased Percentage = $\frac{\text{Population decreased}}{\text{Original population}}\times 100$

$= \frac{500}{25000}\times 100 = 2\%$

Hence, the percentage decreased is 2%.

Question 4:

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

Answer 4:

Increased in price of a car from ₹ 3,50,000 to ₹ 3,70,000.

Amount change = ₹ 3,70,000 – ₹ 3,50,000 = ₹ 20,000.

Therefore, Increased percentage = $\frac{\text{Amount of change}}{\text{Original amount}}\times 100$

$= \frac{20000}{350000}\times 100 = 5\frac{5}{7}\%$

Hence, the percentage of price increased is $5\frac{5}{7}\%$.

Question 5:

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

Answer 5:

The cost price of T.V. = ₹ 10,000

Profit percent = 20%

Now, Profit = Profit% of C.P.

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

= ₹ 2,000

Selling price = C.P. + Profit = ₹10,000 + ₹2,000 = ₹ 12,000

Hence, he gets ₹12,000 on selling his T.V.

Question 6:

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

Answer 6:

Selling price of washing machine = ₹13,500

Loss percent = 20%

Let the cost price of washing machine be ₹ x.

Since, Loss = Loss% of C.P.

$\Rightarrow$ Loss = 20% of ₹ x = $\frac{20}{100} \times x = \frac{x}{5}$

Therefore, S.P. = C.P. – Loss

$\Rightarrow$ $13500 = x - \frac{x}{5}$

$\Rightarrow$ $13500 = \frac{4x}{5}$

$\Rightarrow$ $x = \frac{13500 \times 5}{4}$ = ₹16,875

Hence, the cost price of washing machine is ₹16,875.

Question 7:

(i) Chalk contains Calcium, Carbon and Oxygen in the ratio 10:3:12. Find the percentage of Carbon in chalk.

(ii) If in a stick of chalk, Carbon is 3 g, what is the weight of the chalk stick?

Answer 7:

(i) Given ratio = 10 : 3 : 12

Total part = 10 + 3 + 12 = 25

Part of Carbon = $\frac{3}{25}$

Percentage of Carbon part in chalk = $\frac{3}{25}\times 100 = 12\%$

(ii) Quantity of Carbon in chalk stick = 3 g

Let the weight of chalk be x g.

Then, 12% of x = 3

$\Rightarrow \quad \frac{12}{100}\times x = 3$

$\Rightarrow \quad x = \frac{3\times 100}{12}$ = 25 g

Hence, the weight of chalk stick is 25 g.

Question 8:

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

Answer 8:

The cost of a book = ₹275

Loss percent = 15%

Loss = Loss% of C.P. = 15% of ₹275

$= \frac{15}{100}\times 275$ = ₹ 41.25

Therefore, S.P. = C.P. – Loss = ₹275 – ₹41.25 = ₹233.75

Hence, Amina sells a book for ₹233.75.

Question 9:

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

(a) Principal = ₹1,200 at 12% p.a.

(b) Principal = ₹ 7,500 at 5% p.a.

Answer 9:

(a) Here, Principal (P) = ₹1,200, Rate (R) = 12% p.a., Time (T) = 3 years

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{1200 \times 12 \times 3}{100}$$

$$= ₹\ 432$$

Now, Amount = Principal + Simple Interest

$$= ₹1200 + ₹432$$

$$= ₹1,632$$

(b) Here, Principal (P) = ₹7,500, Rate (R) = 5% p.a., Time (T) = 3 years

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{7500 \times 5 \times 3}{100}$$

$$= ₹1,125$$

Now, Amount = Principal + Simple Interest

$$= ₹7,500 + ₹1,125$$

$$= ₹\ 8,625$$

Question 10:

What rate gives ₹ 280 as interest on a sum of ₹ 56,000 in 2 years?

Answer 10:

Here, Principal (P) = ₹56,000, Simple Interest (S.I.) = ₹280, Time (T) = 2 years

$$\text{Simple Interest} = \frac{P \times R \times T}{100}$$

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

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

$$\Rightarrow \quad R = 0.25\%$$

Hence, the rate of interest on sum is 0.25%.

Question 11:

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

Answer 11:

Simple Interest = ₹45, Rate (R) = 9% p.a., Time (T) = 1 years

$$\text{Simple Interest} = \frac{P \times R \times T}{100}$$

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

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

$$\Rightarrow \quad P = ₹\ 500$$

Hence, she borrowed ₹ 500.