

PROFIT, LOSS AND DISCOUNT

PERIOD 4

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 8
CHAPTER NAME : PROFIT, LOSS AND DISCOUNT

CHANGING YOUR TOMORROW

Learning outcome

The children will be able calculate profit and loss problems (HOTS).

Previous knowledge:

1. By selling a sofa-set for Rs.2,500; the shopkeeper loses 20%. Find his loss percent or profit percent ; if he sells the same sofa-set for Rs.3150.

2. A tape-recorder is sold for Rs. 2,760 at a gain of 15% and a C.D. player is sold for Rs. 3,240 at a loss of 10% Find :

(i) the C.P. of the tape-recorder

(ii) the C.P. of the C.D. player.

(iii) the total C.P. of both.

(iv) the total S.P. of both

(v) the gain % or the loss % on the whole

Exercise- 8(C)

Question 1.

A stationer buys pens at 5 for Rs.28 and sells them at a profit of 25 %. How much should a customer pay; if he buys

- (i) only one pen ;
- (ii) three pens ?

Solution:

For Stationer :

C.P. of 5 pens = Rs.28

C.P. of 1 pen = $\frac{28}{5}$ Rs. = Rs.5.60

Profit = 25%

∴ S.P. of 1 pen

$$= \frac{(100 + \text{Profit}\%)}{100} \times \text{C.P. of 1 pen}$$

$$= \left(\frac{100 + 25}{100} \right) \times \text{Rs.} 5.60 = \text{Rs.} \frac{125}{100} \times 5.60$$

$$= \text{Rs.} \frac{125 \times 5.6}{100} = \text{Rs.} 5 \times 1.4 = \text{Rs.} 7$$

S.P. of 3 pens = $3 \times 7 = \text{Rs.} 21$

∴ Customer pays for

(i) only one pen = Rs.7

(ii) Three pens = Rs.21

Exercise- 8(C)

Question 2.

A fruit-seller sells 4 oranges for Rs. 3, gaining 50%. Find :

- (i) C.P. of 4 oranges,
- (ii) C.P. of one orange.
- (iii) S.P. of one orange.
- (iv) profit made by selling one orange.
- (v) number of oranges brought and sold in order to gain Rs. 24.

Solution:

$$\text{S.P. of 4 oranges} = \text{Rs. } 3$$

$$\therefore \text{S.P. of 1 orange} = \text{Rs. } \frac{3}{4}, \quad \text{Gain} = 50\%$$

$$\text{S.P.} = \frac{\text{C.P.} \times 150}{100}$$

$$\therefore \text{C.P. of 1 orange} = \frac{100 \times \text{S.P.}}{(100 + 50)}$$

$$= \frac{100 \times \frac{3}{4}}{150} = \frac{75}{150} = \text{Re } \frac{1}{2}$$

$$\text{(i) C.P. of 4 oranges} = 4 \times \frac{1}{2} = \text{Rs. } 2$$

$$\text{(ii) C.P. of 1 orange} = \text{Rs. } \frac{1}{2} = \text{Rs. } (0.50)$$

$$\text{(iii) S.P. of 1 orange} = \text{Rs. } \frac{3}{4} = \text{Rs. } 0.75$$

Solution:

(iv) Profit made by selling one orange

$$= \text{Rs. } \frac{3}{4} - \text{Rs. } \frac{1}{2} = \text{Rs. } \frac{1}{4} = \text{Rs. } 0.25$$

(v) If gain is Rs $\frac{1}{4}$, number of oranges = 1

If gain is Rs. 24, number of oranges = $\frac{1}{\frac{1}{4}} \times 24$

$$1 \times \frac{4}{1} \times 24 = 96$$

Exercise- 8(C)

Question 4.

The cost price of 20 articles is same as the selling price of 16 articles. Find the gain percent

Solution:

C.P. of 20 articles = S.P. of 16 articles.

Let C.P. of 1 article = Re. 1

C.P. of 20 articles = Rs.20

and C.P. of 16 articles = Rs.16

S.P. of 16 articles = Rs.20

[S.P. of 16 articles = C.P. of 20 articles]

Gain = Rs.20 – Rs.16 = Rs.4

$$\text{Gain\%} = \frac{4}{16} \times 100$$

$$= \frac{4 \times 100}{16}$$

$$= 25\%$$

Exercise- 8(C)

Question 5.

The selling price of 15 articles is equal to the cost price of 12 articles.
Find the gain or loss as percent

Solution:

S.P. of 15 articles = C.P. of 12 articles

Let C.P. of 1 article = Re.1

C.P. of 12 article = Rs.12

and C.P. of 15 articles = Rs.15

S.P. of 15 articles = Rs.12

[S.P. of 15 articles = C.P. of 12 articles]

Loss = Rs.15 – Rs.12 = Rs.3

Loss% = $\frac{3}{15} \times 100 = 20\%$

Home Assignment

Exercise 8(C) - 1 to 5

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