PROFIT, LOSS AND DISCOUNT
PERIOD 3

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

Learning outcome

The children will be able calculate profit, loss problems.

Previous knowledge:

1. Find the selling price, if:
(i) C.P. = Rs. 950 and profit = 8%
(ii) C.P. = Rs. 1,300 and loss = 13%
2. By selling an article for Rs.900; a man gains 20%. Find his cost price and the gain.
3. By selling an article for Rs.704; a person loses 12%. Find his cost price and the loss

Exercise- 8(B)

Question 6.

If John sells his bicycle for Rs. 637, he will suffer a loss of 9%. For how much should it be sold, if he desires a profit of 5%?

Solution:

$$S.P. = Rs.\ 637, \qquad Loss = 9\%$$

$$\therefore\ C.P. = \frac{100 \times S.P.}{100 - 9}$$

$$= \frac{100}{91} \times 637 = 100 \times 7 = Rs.\ 700$$

Profit = 5%

$$S.P. = \frac{(100 + Profit)}{100} \times C.P.$$

$$S.P. = \frac{(100 + 5)}{100} \times 700 = 105 \times 7 = 735$$

Exercise- 8(B)

Question 8.

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.

Solution:

In the first condition :

S.P. of a Sofa-set $= $ Rs.2500

Loss $= 20\%$

$\therefore \quad$ C.P. $= \dfrac{100}{(100 - \text{Loss}\%)} \times$ S.P.

$= \dfrac{100}{(100 - 20)} \times$ Rs.2500 $=$ Rs. $\dfrac{100}{80} \times 2500$

$=$ Rs. $\dfrac{100 \times 2500}{80} = \dfrac{5 \times 2500}{4} = 5 \times 625$

$=$ Rs.3125

In the second condition :

S.P. of the sofa-set $=$ Rs.3150

C.P. of the sofa-set $=$ Rs.3125

Gain $=$ S.P. $-$ C.P.

$\quad = $ Rs.3150 $-$ Rs.3125 $=$ Rs.25

Gain $\% = \dfrac{\text{Gain}}{\text{C.P.}} \times 100$

$\quad = \dfrac{25}{3125} \times 100 = \dfrac{25 \times 100}{3125} = \dfrac{100}{125}$

$\quad = \dfrac{4}{5}\% = 0\cdot8\%$

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Exercise- 8(B)

Question 9.

Mr. Sinha sold two tape-recorders for Rs.990 each; gaining 10% on one and losing 10% on the other. Find his total loss or gain as percent on the whole transaction.

Solution:

In the case of first tape-recorder :

S.P. = Rs.990

Gain = 10%

$$C.P. = \frac{100}{(100 + gain\%)} \times S.P.$$

$$= \frac{100}{(100 + 10)} \times Rs.990 = Rs. \frac{100}{110} \times 990$$

$$= Rs. \ 100 \times 9 = Rs.900$$

In the case of second tape-recorder :

S.P. = Rs.990

Loss = 10%

$$C.P. = \frac{100}{(100 - Loss\%)} \times S.P.$$

$$= \frac{100}{(100 - 10)} \times Rs.990 = \frac{100}{90} \times 990$$

$$= 100 \times 11 = Rs.1100$$

Total C.P. of both the tape-recorders

= Rs.900 + Rs.1100 = Rs.2000

Total S.P. of both the tape-recorders

= Rs.990 + Rs.990 = Rs.1980

Loss on the whole transaction

= C.P. − S.P. = Rs.2000 − Rs.1980

= Rs.20

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

$$= \frac{Rs.20}{Rs.2000} \times 100 = \frac{2}{2}\% = 1\%$$

Exercise- 8(B)

Question 10.

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

Solution:

S.P. of tape-recorder = Rs. 2,760

Gain = 15%

(i) C.P. $= \dfrac{100 \times \text{S.P.}}{115}$ $\left[\text{C.P.} = \dfrac{100 \times \text{S.P.}}{(100 + \text{Gain})} \right]$

$= \dfrac{100 \times 2760}{115} = \dfrac{20 \times 2760}{23} = 20 \times 120 = \text{Rs. } 2400$

(ii) S.P. of C.D. Player = Rs. 3,240

$\left[\text{C.P.} = \dfrac{100}{(100 - \text{loss})} \times \text{S.P.} \right]$

$= \dfrac{100}{(100 - 10)} \times 3240 = \dfrac{100}{90} \times 3240$

$= 100 \times 36 = \text{Rs. } 3600$

(iii) Total C.P. of both = Rs. 2400 + Rs. 3600 = Rs. 6000

(iv) Total S.P. of both = Rs. 2760 + Rs. 3240 = Rs. 6000

(v) Since S.P. = C.P.

there is no gain and no loss on the whole.

Home Assignment

Exercise 8(B) - 7 to 12

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