

# PROFIT, LOSS AND DISCOUNT

## PERIOD 5

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

**CHANGING YOUR TOMORROW**

# Learning outcome

The children will be able calculate discount and its percentage

# Previous knowledge:

1. 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.

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

## Exercise- 8(D)

Question 1.

An article is marked for Rs. 1,300 and is sold for Rs. 1,144 ; find the discount percent.

## Solution:

Marked price = Rs. 1,300, S.P. = Rs. 1,144  
Discount = Rs. 1,300 – Rs. 1,144 = Rs. 156

$$\therefore \text{Discount \%} = \frac{156}{1300} \times 100 = \frac{156}{13} = 12\%$$

## Exercise- 8(D)

Question 3.

A wrist-watch is available at a discount of 9%. If the list-price of the watch is Rs. 1,400 ; find the discount given and the selling price of the watch.

## Solution:

List price of the watch = Rs. 1,400

Discount = 9%

Discount =  $\frac{1400 \times 9}{100} = 14 \times 9 = \text{Rs. } 126$

S.P. = (List price – Discount) = Rs. (1400 – 126) = Rs. 1274

## Exercise- 8(D)

Question 5.

A shop-keeper buys an article for Rs.450. He marks it at 20% above the cost price. Find :

- (i) the marked price of the article.
- (ii) the selling price, if he sells the articles at 10 percent discount.
- (iii) the percentage discount given by him, if he sells the article for Rs.496.80



## Solution:

C.P. of the article = Rs.450

(i) Marked price of the article

$$= \frac{100+20}{100} \times \text{Rs.}450$$

$$= \text{Rs.} \frac{120}{100} \times 450 = 12 \times 45 = \text{Rs.}540$$

∴ Marked price of the article = Rs. 540

(ii) Discount =  $\frac{10}{100} \times \text{M.P.}$

$$= \frac{10}{100} \times \text{Rs.}540$$

$$= \text{Rs.}54$$

$$\text{S.P.} = \text{M.P.} - \text{Discount}$$

$$= \text{Rs.}540 - \text{Rs.}54$$

$$= \text{Rs.}486$$

## Solution:

$$\begin{aligned} \text{(iii)} \quad \text{S.P.} &= \text{Rs.}496\cdot80 \\ \text{M.P.} &= \text{Rs.}540 \\ \text{Discount} &= \text{M.P.} - \text{S.P.} \\ &= \text{Rs.}540 - \text{Rs.}496\cdot80 \\ &= \text{Rs.}43\cdot20 \\ \text{Discount \%} &= \frac{\text{Discount}}{\text{M.P.}} \times 100 \\ &= \frac{43\cdot20}{540} \times 100 \\ &= \frac{4320}{540} \% \\ &= 8\% \end{aligned}$$

## Exercise- 8(D)

Question 14.

The cost price of an article is 25% below the marked price. If the article is available at 15% discount and its cost price is Rs. 2,400; find:

- (i) Its marked price
- (ii) its selling price
- (iii) the profit percent.

## Solution:

Let M.P. of an article = ₹ 100

$$\therefore \text{Cost price} = \frac{100 \times (100 - 25)}{100}$$

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

Discount = 15%

$$\therefore \text{S.P.} = ₹ 100 - 15 = ₹ 85$$

But cost price = ₹ 2400

$$(i) \therefore \text{Marked price} = ₹ 2400 \times \frac{100}{75}$$
$$= ₹ 32 \times 100 = ₹ 3200$$

$$(ii) \text{ and S.P.} = ₹ \frac{3200 \times 85}{100} = ₹ 2720$$

$$(iii) \text{ Profit} = \text{S.P.} - \text{C.P.} = ₹ 2720 - 2400 = ₹ 320$$

$$\therefore \text{Profit}\% = \frac{\text{Profit} \times 100}{\text{C.P.}} = \frac{320 \times 100}{2400}$$

$$= \frac{40}{3}\% = 13\frac{1}{3}\%$$

# Exercise- 8(D)

Question 15.

Find a single discount (as percent) equivalent to following successive discounts:

(i) 20% and 12%

(ii) 10%, 20% and 20%

## Solution:

(i) Successive discount = 20% and 12%

Let M.P. = ₹ 100

First discount = 20%

Second discount = 12%

$$\therefore \text{S.P.} = \frac{\text{M.P.}(100 - \text{Discount}\%)}{100}$$

$$= \frac{100 \times (100 - 20)(100 - 12)}{100 \times 100}$$

$$= \frac{100 \times 80 \times 88}{100 \times 100} = \frac{352}{5}$$

$$\therefore \text{Total discount on ₹ 100} = 100 - \frac{352}{5}$$

$$= \frac{500 - 352}{5} = ₹ \frac{148}{5}$$

$$\therefore \text{Single discount} = \frac{148}{5} \% = 29\frac{3}{5} \%$$

## Solution:

(ii) Successive discounts 10%, 20% and 20%

Let M.P. = ₹ 100

∴ S.P. after 3 discounts

$$= \frac{100(100 - 10)(100 - 20)(100 - 20)}{100 \times 100 \times 100}$$

$$= \frac{100 \times 90 \times 80 \times 80}{100 \times 100 \times 100} = \frac{576}{10}$$

$$\therefore \text{Total discount} = ₹ 100 - \frac{576}{10}$$

$$= ₹ \frac{1000 - 576}{10} = \frac{424}{10}$$

$$\therefore \text{Single discount} = \frac{424}{10} \% = 42.4\%$$

# Home Assignment

Exercise 8(D) - 1 to 5



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