

Exercise 7.3

1. Find the discount and the selling price, when:

(i) the marked price = ₹ 575, discount = 12%

(ii) the printed price = ₹ 12750, discount = $8\frac{1}{3}\%$

Solution:

(i) the marked price = ₹ 575, discount = 12%

Here

Amount of discount = 12 % of ₹ 575

It can be written as

$$= (12/100 \times 575)$$

By further calculation

$$= (12/4 \times 23)$$

So we get

$$= 3 \times 23$$

$$= ₹ 69$$

We know that

Net sale price = M.P. – discount

Substituting the values

$$= 575 - 69$$

$$= ₹ 506$$

(ii) the printed price = ₹ 12750, discount = $8\frac{1}{3}\% = \frac{25}{3}\%$

Here

Amount of discount = $25/3$ % of ₹ 12750

It can be written as

$$= [25/ (3 \times 100) \times 12750]$$

By further calculation

$$= (25/30 \times 1275)$$

So we get

$$= (5/6 \times 1275)$$

$$= ₹ 1062.50$$

We know that

Net sale price = M.P. – discount

Substituting the values

$$= 12750 - 1062.50$$

$$= ₹ 11687.50$$

2. Find the discount and the discount percentage, when:

(i) marked price = ₹ 780, selling price = ₹ 721.50

(ii) advertised price = ₹ 28500, selling price = ₹ 24510

Solution:

(i) marked price = ₹ 780, selling price = ₹ 721.50

We know that

Discount = M.P. – Selling price

Substituting the values

$$= 780 - 721.50$$

$$= ₹ 58.50$$

Here

$$\text{Discount \%} = [\text{Discount}/\text{M.P.} \times 100] \%$$

Substituting the values

$$= [58.50/780 \times 100] \%$$

By further calculation

$$= 5850/780 \%$$

So we get

$$= 585/78 \%$$

$$= 7.5 \%$$

(ii) advertised price = ₹ 28500, selling price = ₹ 24510

We know that

$$\text{Discount} = \text{Advertised price} - \text{Selling Price}$$

Substituting the values

$$= 28500 - 24510$$

$$= ₹ 3990$$

Here

$$\text{Discount \%} = [\text{Discount}/ \text{advertised price} \times 100] \%$$

Substituting the values

$$= [3990/ 28500 \times 100] \%$$

So we get

$$= 3990/ 285 \%$$

= 14 %

3. A notebook is marked at ₹ 30. Find the price a student pays for a dozen notebooks if he gets 15% discount.

Solution:

It is given that

M.P. of one notebook = ₹ 30

M.P. of one dozen notebooks = $30 \times 12 = ₹ 360$

Discount = 15%

We know that

Amount of discount = 15% of M.P.

It can be written as

= 15% of ₹ 360

By further calculation

= $(15/100 \times 360)$

So we get

= $(15/10 \times 36)$

= $(3/2 \times 36)$

On further simplification

= 3×18

= ₹ 54

Price a student pays for a dozen notebooks = $360 - 54 = ₹ 306$

4. A dealer gave 9% discount on an electric fan and charges ₹ 728 from the customer. Find the marked price of the fan.

Solution:

Consider ₹ x as the M.P. of the fan

Discount = 9%

We know that

Amount of discount = 9% of ₹ x

It can be written as

$$= \frac{9}{100} \times x$$

$$= ₹ \frac{9x}{100}$$

Here

Charges for customer = ₹ x - ₹ $\frac{9x}{100}$

Substituting the values

$$728 = \frac{(100x - 9x)}{100}$$

By further calculation

$$728 = \frac{91x}{100}$$

So we get

$$x = \frac{(728 \times 100)}{91}$$

$$x = 8 \times 100$$

$$x = 800$$

Therefore, the marked price of the fan is ₹ 800.

5. The list price of an article is ₹ 800 and a dealer is selling it at a discount of 20 %. Find:

(i) the selling price of the article.

(ii) the cost price of the article if he makes 25% profit on selling it.

Solution:

(i) It is given that

$$\text{M.P.} = ₹ 800$$

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

We know that

$$\text{S.P.} = [1 - d/100] \text{ of M.P.}$$

Substituting the values

$$\text{S.P.} = [1 - 20/100] \text{ of ₹ 800}$$

By further calculation

$$\text{S.P.} = 80/100 \times 800$$

$$\text{S.P.} = ₹ 640$$

Therefore, the selling price is ₹ 640.

(ii) It is given that

$$\text{S.P.} = ₹ 640$$

$$\text{Profit} = 25\%$$

We know that

$$\text{S.P.} = [1 + P/100] \text{ of C.P.}$$

Substituting the values

$$640 = [1 + 25/100] \text{ of C.P.}$$

By further calculation

$$640 = 125/100 \text{ of C.P.}$$

So we get

$$\text{C.P.} = [640 \times 100/125]$$

$$\text{C.P.} = 128 \times 4$$

$$\text{C.P.} = ₹ 512$$

6. A shopkeeper marks his goods at such a price that would give him a profit of 10% after allowing a discount of 12%. If an article is marked at ₹ 2250, find its:

(i) selling price

(ii) cost price.

Solution:

(i) It is given that

$$\text{M.P. of an article} = ₹ 2250$$

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

We know that

$$\text{S.P.} = [1 - d/100] \text{ of M.P.}$$

Substituting the values

$$\text{S.P.} = [1 - 12/100] \text{ of ₹ 2250}$$

By taking LCM

$$\text{S.P.} = (100 - 12)/100 \times 2250$$

By further calculation

$$\text{S.P.} = 88/100 \times 2250$$

So we get

$$\text{S.P.} = 88/4 \times 90$$

$$\text{S.P.} = 22 \times 90$$

$$\text{S.P.} = ₹ 1980$$

(ii) It is given that

$$\text{S.P.} = ₹ 1980$$

$$\text{Profit} = 10\%$$

We know that

$$\text{S.P.} = [1 + P/100] \text{ of C.P.}$$

Substituting the values

$$1980 = [1 + 10/100] \text{ of C.P.}$$

By further calculation

$$1980 = 110/100 \text{ of C.P.}$$

So we get

$$\text{C.P.} = 1980 \times 100/110$$

$$\text{C.P.} = 18 \times 100$$

$$\text{C.P.} = ₹ 1800$$

Therefore, the cost price is ₹ 1800.

7. A shopkeeper purchased a calculator for ₹ 650. He sells it at a discount of 20% and still makes a profit of 20%. Find:

(i) the selling price

(ii) marked price

Solution:

(i) It is given that

$$\text{C.P.} = ₹ 650$$

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

We know that

$$\text{S.P.} = [1 + P/100] \text{ of C.P.}$$

Substituting the values

$$= [1 + 20/100] \times 650$$

By further calculation

$$= 120/100 \times 650$$

So we get

$$= 12 \times 65$$

$$= ₹ 780$$

Therefore, the selling price of the calculator is ₹ 780.

(ii) It is given that

$$\text{S.P.} = ₹ 780$$

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

We know that

$$\text{S.P.} = [1 - d/100] \text{ of M.P.}$$

Substituting the values

$$780 = [1 - 20/100] \text{ of M.P.}$$

By further calculation

$$780 = 80/100 \text{ of M.P.}$$

It can be written as

$$\text{M.P.} = 780 \times 100/80$$

So we get

$$\text{M.P.} = 780 \times 10/8$$

$$\text{M.P.} = 7800/8$$

$$\text{M.P.} = ₹ 975$$

Therefore, the marked price of the calculator is ₹ 975.

8. A shopkeeper buys a dinner set for ₹ 1200 and marks it 80% above the cost price. If he gives 15 % discount on it, find:

(i) the marked price

(ii) the selling price

(iii) his profit percentage.

Solution:

(i) It is given that

$$\text{C.P. of a dinner set} = ₹ 1200$$

We know that

$$\text{M.P.} = 1200 + 80\% \text{ of } ₹ 1200$$

By further calculation

$$= 1200 + 80/100 \times 1200$$

So we get

$$= 1200 + 80 \times 12$$

By multiplication

$$= 1200 + 960$$

$$= ₹ 2160$$

(ii) It is given that

$$\text{M.P.} = ₹ 2160$$

Discount = 15%

We know that

S.P. = $(1 - d/100)$ of M.P.

Substituting the values

$$= (1 - 15/100) \times 2160$$

By further calculation

$$= 85/100 \times 2160$$

So we get

$$= 17/20 \times 2160$$

$$= 17 \times 108$$

$$= ₹ 1836$$

(iii) We know that

Profit = S.P. - C.P.

Substituting the values

$$= 1836 - 1200$$

$$= ₹ 636$$

Here

Profit % = $[\text{Profit}/\text{C.P.} \times 100]$ %

Substituting the values

$$= (636/1200 \times 100) \%$$

By further calculation

$$= 636/12 \%$$

= 53 %

9. The cost price of an article is ₹ 1600, which is 20% below the marked price. If the article is sold at a discount of 16%, find:

(i) the marked price

(ii) the selling price

(iii) profit percentage.

Solution:

(i) It is given that

$$\text{C.P.} = ₹ 1600$$

C.P of an article is 20% below the M.P.

Take ₹ x as the M.P. of an article

We know that

$$\text{C.P.} = \text{M.P.} - 20\% \text{ of M.P.}$$

Substituting the values

$$1600 = x - 20\% \text{ of } x$$

It can be written as

$$1600 = x - 20/100 \times x$$

By further calculation

$$1600 = 80x/100$$

So we get

$$x = 1600 \times 100/80$$

$$x = 20 \times 100$$

$$x = ₹ 2000$$

Therefore, the M.P. of an article is ₹ 2000.

(ii) It is given that

$$\text{M.P.} = ₹ 2000$$

$$\text{Discount} = 16\%$$

We know that

$$\text{S.P.} = [1 - 16/100] \text{ of M.P.}$$

Taking LCM

$$= (100 - 16)/100 \text{ of ₹ 2000}$$

By further calculation

$$= 84/100 \times 2000$$

So we get

$$= 84 \times 20$$

$$= ₹ 1680$$

(iii) It is given that

$$\text{Profit} = \text{S.P.} - \text{C.P.}$$

Substituting the values

$$= 1680 - 1600$$

$$= ₹ 80$$

We know that

$$\text{Profit \%} = [\text{Profit}/\text{C.P.} \times 100] \%$$

Substituting the values

$$= [80/1600 \times 100] \%$$

So we get

$$= 80/16 \%$$

$$= 5 \%$$

10. A shopkeeper allows 20% discount on his goods and still earns a profit of 20%. If an article is sold for ₹ 360, find:

(i) the marked price

(ii) the cost price.

Solution:

(i) It is given that

Dealer allows a discount of 20%

$$\text{S.P.} = [1 - d/100] \text{ of M.P.}$$

Substituting the values

$$360 = [1 - 20/100] \text{ of M.P.}$$

By further calculation

$$360 = 80/100 \text{ of M.P.}$$

It can be written as

$$\text{M.P.} = 360 \times 100/80$$

$$\text{M.P.} = 360 \times 10/8$$

So we get

$$\text{M.P.} = 45 \times 10$$

$$\text{M.P.} = ₹ 450$$

(ii) Consider ₹ x as the C.P. of the article

Profit = 20%

S.P. = ₹ 360

We know that

S.P. = $[1 + P/100]$ of C.P.

Substituting the values

$360 = [1 + 20/100]$ of x

By further calculation

$360 = [1 + 1/5]$ of x

So we get

$360 = 6x/5$

By cross multiplication

$x = 360 \times 5/6$

$x = 60 \times 5$

$x = ₹ 300$

Therefore, the C.P. of the article is ₹ 300.