

## Profit and Loss

### Exercise 56:

#### Solution 1:

If Cost price < Selling price, there is a Profit.

Profit = Selling price (S.P.) – Cost price (C.P.)

If Cost price > Selling price, there is a Loss.

Loss = Cost price (C.P.) – Selling price (S.P.)

1. Here, S.P. > C.P., hence there is a profit.

∴ Profit = S.P. – C.P. = Rs. (25 – 20) = Rs. 5

2. Here, C.P. > S.P., hence there is a loss.

∴ Loss = C.P. – S.P. = Rs. (24 – 18) = Rs. 6

3. Here, Profit = Rs. 10, S.P. = Rs. 40

∴ C.P. = S.P. – Profit = Rs. (40 – 10) = Rs. 30

4. Here, Loss = Rs. 15, C.P. = Rs. 50

∴ S.P. = C.P. – Loss = Rs. (50 – 15) = Rs. 35

	Cost Price (Rs.)	Selling Price (Rs.)	Profit (Rs.)	Loss (Rs.)
1.	20	25	5	—
2.	24	18	—	6
3.	30	40	10	10
4.	50	35	—	15

#### Solution 2:

Cost price, C.P. = Rs. 70

Selling price, S.P. = Rs. 90

Profit = Selling price – Cost price (= S.P. – C.P.)

∴ Profit made by Akshay = S.P. – C.P.

= Rs. (90 – 70)

= Rs. 20

Hence, Akshay made a profit of Rs. 20.

### Solution 3:

Cost price, C.P. = Rs. 100

Selling price, S.P. = Rs. 120

If Cost price < Selling price, then there is a profit.

Here, Cost price, Rs. 100 < Selling price, Rs. 120

Hence, there is a profit.

Profit = Selling price – Cost price (= S.P. – C.P.)

∴ Profit made by Gulabbhai = S.P. – C.P.

= Rs. (120 – 100)

= Rs. 20

Thus, Gulabbhai made a profit of Rs. 20.

### Solution 4:

Cost price of 1 dozen oranges = Rs. 40

∴ Cost price of 8 dozen oranges = Rs. (8 × 40) = Rs. 320

Selling price of 1 dozen oranges = Rs. 35

∴ Selling price of 8 dozen oranges = Rs. (8 × 35) = Rs. 280

Loss = Cost price – Selling price (= C.P. – S.P.)

∴ Loss to Ramzanbhai = C.P. – S.P.

= Rs. (320 – 280)

= Rs. 40

Hence, Ramzanbhai incurred a loss of Rs. 40.

### Solution 5:

Cost price of 1 litre milk = Rs. 15

∴ Cost price of 70 litres milk = Rs. (15 × 70) = Rs. 1050

Selling price of 70 litres milk = Rs. 1260

Here, Cost price < Selling price.

Hence, there is a profit.

Profit = Selling price – Cost price (= S.P. – C.P.)

∴ Profit made by Shakuntala = S.P. – C.P.

= Rs. (1260 – 1050)

= Rs. 210

Thus, Shakuntala made a profit of Rs. 210.

### Solution 6:

Cost price of 1 pencil box = Rs. 30

∴ Cost price of 10 pencil boxes = Rs. (10 × 30) = Rs. 300

Selling price of 10 pencil boxes = Rs. 290

Here, Selling price < Cost price.

Hence, there is a loss.

Loss = Cost price – Selling price (= C.P. – S.P.)

∴ Loss to Shalaka = C.P. – S.P.

= Rs. (300 – 290)

= Rs. 10

Hence, Shalaka incurred a loss of Rs. 10.

## Exercise 57:

### Solution 1:

Cost price of a TV set = Rs. 10000

Selling price of a TV set = Rs. 8000

Here, Selling price < Cost price.

Hence, there is a loss.

Loss = Cost price – Selling price

= Rs. (10000 – 8000)

= Rs. 2000

On cost price of Rs. 10000, loss = Rs. 2000

On cost price of Rs. 100, loss = ?

Let the loss on a C.P. of Rs. 100 be x.

Then,  $\frac{10000}{100} = \frac{2000}{x}$

$\therefore \frac{100}{1} = \frac{2000}{x}$

$\therefore 100x = 2000$

$\therefore x = 20$

$\therefore$  Loss percent = 20

Hence, Shriraj incurred a loss of 20%.

### Solution 2:

Cost price of a sewing machine = Rs. 2500

Selling price of a sewing machine = Rs. 2700

Profit = Selling price – Cost price

= Rs. (2700 – 2500)

= Rs. 200

On cost price Rs. 2500, profit = Rs. 200

On cost price Rs. 100, profit = ?

Let the profit on a C.P. of Rs. 100 be x.

Then,  $\frac{2500}{100} = \frac{200}{x}$

$\therefore 25x = 200$

$\therefore x = 8$

$\therefore$  Profit percent = 8

Hence, Julie incurred a profit of 8%.

### Solution 3:

1. C.P. = Rs. 5000, S.P. = Rs. 6000  
Profit = S.P. - C.P. = Rs. (6000 - 5000)  
 $\therefore$  Profit = Rs. 1000  
On cost price Rs. 5000, profit = Rs. 1000  
On cost price Rs. 100, profit = ?  
Let the profit on a C.P. of Rs. 100 be x.  
Then,  $\frac{5000}{100} = \frac{1000}{x}$   
 $\therefore 50x = 1000$   
 $\therefore x = 20$   
 $\therefore$  Profit percent = 20
2. C.P. = Rs. 2500, S.P. = Rs. 2375  
Loss = C.P. - S.P. = Rs. (2500 - 2375)  
 $\therefore$  Loss = Rs. 125  
On cost price Rs. 2500, loss = Rs. 125  
On cost price Rs. 100, loss = ?  
Let the profit on a C.P. of Rs. 100 be x.  
Then,  $\frac{2500}{100} = \frac{125}{x}$   
 $\therefore 25x = 125$   
 $\therefore x = 5$   
 $\therefore$  Loss percent = 5
3. C.P. = Rs. 7216, S.P. = Rs. 8118  
Profit = S.P. - C.P. = Rs. (8118 - 7216)  
 $\therefore$  Profit = Rs. 902  
On cost price Rs. 7216, profit = Rs. 902  
On cost price Rs. 100, profit = ?  
Let the profit on a C.P. of Rs. 100 be x.  
Then,  $\frac{7216}{100} = \frac{902}{x}$   
 $\therefore x = \frac{902 \times 100}{7216}$   
 $\therefore x = 12.5$   
 $\therefore$  Profit percent = 12.5

4. C.P. = Rs. 8400, S.P. = Rs. 7875  
 Loss = C.P. – S.P. = Rs. (8400 – 7875)  
 $\therefore$  Loss = Rs. 525  
 On cost price Rs. 8400, loss = Rs. 525  
 On cost price Rs. 100, loss = ?  
 Let the loss on a C.P. of Rs. 100 be x.,  
 Then,  $\frac{8400}{100} = \frac{525}{x}$   
 $\therefore 84x = 525$   
 $\therefore x = 6.25$   
 $\therefore$  Loss percent = 6.25

	C.P. (Rs.)	S.P. (Rs)	Profit (Rs.)	Loss (Rs.)	Profit %	Loss %
1.	5000	6000	<u>1000</u>	--	<u>20</u>	--
2.	2500	2375	--	<u>125</u>	--	<u>5</u>
3.	7216	8118	<u>902</u>	--	<u>12.5</u>	--
4.	8400	7875	--	<u>525</u>	--	<u>6.25</u>

### Exercise 58:

#### Solution 1:

S.P. = Rs. 16.50, Profit = 10%

$\therefore$  When the cost price is 100, selling price =  $100 + 10 =$  Rs. 110

Suppose the cost of 1 kg sugar is Rs. x.

Ratio of cost prices = Ratio of selling prices

$$\therefore \frac{x}{100} = \frac{16.50}{110}$$

$$\therefore x = \frac{16.50}{110} \times 100 \quad \dots \text{..... (Multiplying both sides by 100)}$$

$$\therefore x = 15$$

$\therefore$  Cost price of 1 kg sugar is Rs. 15.

### Solution 2:

C.P. = Rs. 6500, Profit = 15%

∴ When the cost price is 100, selling price =  $100 + 15 = \text{Rs. } 115$

Suppose the selling price of a cupboard is Rs.  $x$ .

Ratio of cost prices = Ratio of selling prices

$$\therefore \frac{6500}{100} = \frac{x}{115}$$

$$\therefore x = \frac{6500}{100} \times 115 \dots\dots (\text{Multiplying both sides by } 100)$$

$$\therefore x = 7475$$

Hence, to get a 15% profit, the cupboard should be sold at Rs. 7475.

### Solution 3:

C.P. = Rs. 10000, Loss = 12%

∴ When the cost price is 100, selling price =  $100 - 12 = \text{Rs. } 88$

Suppose the selling price of the washing machine is Rs.  $x$ .

Ratio of cost prices = Ratio of selling prices

$$\therefore \frac{10000}{100} = \frac{x}{88}$$

$$\therefore x = \frac{10000}{100} \times 88 \dots\dots (\text{Multiplying both sides by } 100)$$

$$\therefore x = 8800$$

Hence, Damuseth sold the washing machine for Rs. 8800.

**Solution 4:**

S.P. = Rs. 3,45,600, Profit = 8%

∴ When the cost price is 100, selling price =  $100 + 8 = \text{Rs. } 108$

Suppose the cost price of the car is Rs.  $x$ .

Ratio of cost prices = Ratio of selling prices

$$\therefore \frac{x}{100} = \frac{345600}{108}$$

$$\therefore x = \frac{345600}{108} \times 100 \dots (\text{Multiplying both sides by } 100)$$

$$\therefore x = 320000$$

Hence, Maniklal had bought the car for Rs. 3,20,000.