4 Profit-Loss

Let us remember :

We have learnt profit and loss in Std. 5. Let us remember what we have learnt.

(1) Complete the following Table :

Item	Cost price	Selling price	Profit or loss ?	How much ?
Bicycle	₹ 1980	₹ 1800		
Bat	₹ 150	₹ 150		
Fan	₹ 995	₹ 830		

(2) A merchant purchased an old electronic weighscale for ₹ 2225. Its repairing cost is ₹ 525. If the merchant sold the weighscale for ₹ 2780, then he makes profit or loss ? How much rupees ?

(3) Out of 500 students in the school, 475 students got scholarship. How much percentage students got the scholarship ?

(4) Sanjay had ₹ 760. He bought book of ₹ 190. So, he spent how much percentage ?

Let us learn new :

Calculation of profit and loss in percentage :

We have learnt to find profit or loss from cost price (C.P.) or net price (N.P.) or selling price (S.P.). We have also learnt to find percentage of given figures. Now, let us understand the calculation of profit-loss in percentage.

Illustration 1 : C.P. = ₹ 50, S.P. = ₹ 60, then find profit or loss. How much percentage ?

Solution : Here, selling price is more than cost price, so it makes profit.

Profit = S.P. − C.P.

= ₹ 60 − ₹ 50 = ₹ 10

∴ Profit = ₹ 10

Now, let us calculate how much percentage profit is made.

Profit on ₹ 50 C.P. = ₹ 10

∴ Profit on ₹ 100 C.P. = ₹ (?)

$= \left(\frac{10 \times 100}{50}\right)$

= ₹ 20

Second method :

Profit on ₹ 50 C.P. = ₹ 10

Profit on ₹ 100 C.P. = ₹ (?)

$= \left(\frac{10}{50} \times 100\right)$

= ₹ 20

∴ **Profit = 20 %**

Illustration 2 : C.P. = ₹ 700, S.P. = ₹ 665, then find profit or loss. How much percentage ?

Solution : Here, selling price is less than cost price, so it makes loss.

Loss = C.P. − S.P.

= ₹ 700 − ₹ 665 = ₹ 35

∴ Loss = ₹ 35

Now, let us calculate percentage loss,

Loss on ₹ 700 C.P. = ₹ 35

∴ Loss on ₹ 100 C.P. = ₹ (?)

$= \left(\frac{35 \times 100}{700}\right)$

= ₹ 5

∴ **Loss = 5 %**

Illustration 3 : C.P. = ₹ 1050, expense ₹ 50, S.P. = ₹ 1210, then find profit or loss. Also find its percentage.

Solution : Here, first we find net price because expense is given.

N.P. = C.P. + expense

= ₹ 1050 + ₹ 50

= ₹ 1100

Here, selling price is more than net price, so it makes profit.

Profit = S.P. − N.P.

= ₹ 1210 − ₹ 1100 = ₹ 110

∴ **Profit = ₹ 110**

Now, let us calculate percentage profit,

Profit on ₹ 1100 N.P. = ₹ 110

∴ Profit on ₹ 100 N.P. = ₹ (?)

$= \left(\frac{110 \times 100}{1100}\right)$

= ₹ 10

∴ Profit = 10 %

Friends, here, '10 % profit' means '₹ 10 profit on ₹ 100 C.P.' or '₹ 10 profit on ₹ 100 C.P.' means '10 % profit'.

% has no unit.

Profit or loss occurs on ₹ 100 cost price or net price is the percentage of profit or loss.

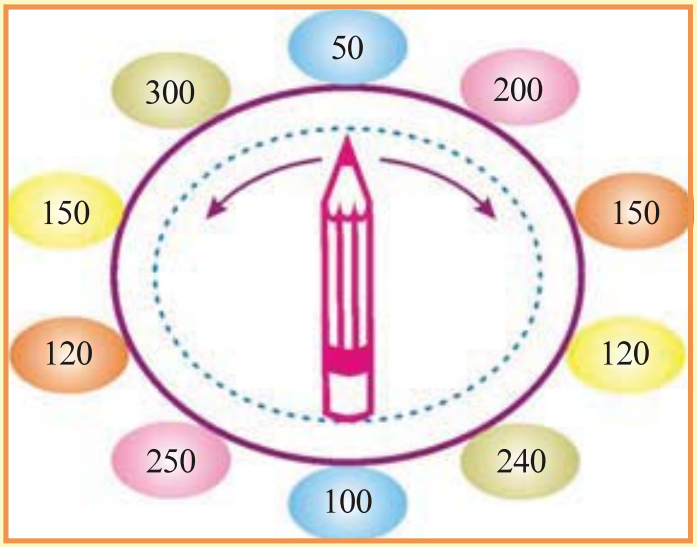
$$\text{Profit (in percentage) \%} = \frac{\text{Profit}}{\text{C.P. or N.P.}} \times 100$$

$$\text{Loss (in percentage) \%} = \frac{\text{Loss}}{\text{C.P. or N.P.}} \times 100$$

- **Find profit or loss in rupees and in percentage from given information. (Calculation necessary) :**

No.	Cost price (in rupees)	Expense (in rupees)	Selling price (in rupees)	Profit / loss (in rupees)	Profit / loss (in %)
(1)	235	15	225		
(2)	930	70	850		
(3)	2300	-	2760		
(4)	3150	250	4250		
(5)	5350	150	5390		

Let us play a game



Rules :

- Rotate the pencil, as per figure on the given circular card.
- Take cost price, towards sharp end of pencil and take selling price value, towards blunt end of pencil.
- Now, find out profit or loss on the basis of these values.
- Also find out profit or loss in percentage.
- **Note :** Keep the length of the pencil such that it covers both the opposite digits.

Practical use of profit-loss :

Illustration 4 : A TV company prepares a small colour TV at the cost of ₹ 2500. If the company sold the TV for ₹ 2850, then it makes profit or loss ? How much percentage ?

Solution : N.P. of TV = ₹ 2500, S.P. = ₹ 2850

Here, S.P. is more than N.P., so profit occur.

Profit = S.P. − N.P.

= ₹ 2850 − ₹ 2500 = ₹ 350

∴ Profit = ₹ 350

Calculation of profit in percentage :

Profit on ₹ 2500 N.P. = ₹ 350

∴ Profit on ₹ 100 N.P. = ₹ (?)

$= \left(\frac{350 \times 100}{2500}\right) =$ ₹ 14

∴ **Profit = 14 %** **The company makes 14 % profit**

Illustration 5 : Ritaben bought a dining set in ₹ 5000. Cover for the table and seat for the chair costing ₹ 1000. After some time, she sold this dining set in ₹ 6360 as she has to go to foreign. So, she makes profit or loss ? How much percentage ?

Solution : C.P. of dining table = ₹ 5000, Expense = ₹ 1000, S.P. = ₹ 6360

N.P. = C.P. + Expense

= ₹ 5000 + ₹ 1000 = ₹ 6000

Here, S.P. is more than N.P., so profit occur.

Profit = S.P. − N.P.

= ₹ 6360 − ₹ 6000 = ₹ 360

Calculation of profit in percentage :

Profit on ₹ 6000 N.P. = ₹ 360

∴ Profit on ₹ 100 N.P. = ₹ (?)

$= \left(\frac{360 \times 100}{6000}\right) = ₹\ 6$

∴ Profit = 6 % **Ritaben got 6 % profit**

Illustration 6 : Dhruvkumar bought 10 swings for ₹ 12,000. Rent to bring it upto shop is ₹ 2000. If he sells 1 swing at ₹ 980, then find profit or loss. How much percentage ?

Solution : C.P. of swing = ₹ 12,000, Expense = ₹ 2,000

N.P. = C.P. + Expense

= ₹ 12,000 + ₹ 2,000 = ₹ 14,000

Dhruvkumar sells a swing at ₹ 980. So, to find profit or loss, we should find N.P.

N.P. of 10 swings = ₹ 14,000

∴ N.P. of 1 swing = ₹ (?)

$= \left(\frac{14000 \times 1}{10}\right) = ₹\ 1400$

N.P. of 1 swing = ₹ 1400, S.P. = ₹ 980

Here, N.P. is more than S.P, so loss occur.

Loss = N.P. − S.P.

= ₹ 1400 − ₹ 980

= ₹ 420

Now, find out the loss.

Second Method :

Selling price of a swing is ₹ 980

∴ S.P. of 10 swing = 980 × 10

= ₹ 9800

∴ S.P. of 10 swing = ₹ 9800

Loss = 14000 − 9800

= 4200

Loss percentage $= \frac{4200 \times 100}{14000}$

= 30 %

Loss on ₹ 1400 N.P. = ₹ 420

Loss on ₹ 100 N.P. = ₹ (?)

$= \left(\frac{420 \times 100}{1400}\right) = \frac{420}{14} =$ ₹ 30

∴ Loss = 30 %

Dhruvkumar suffers 30 % loss

(1) Pankajbhai bought a buffalo at ₹ 25,000. After some time he sold the buffalo at ₹ 22,500. Find profit or loss. Also find its percentage.

(2) A merchant bought jaggery (gud) of ₹ 1225. For this, he gave ₹ 25 labour. Merchant gets ₹ 1325 on selling of this jaggery in loose. Find profit or loss and its percentage.

(3) Rubi bought a digital camera at ₹ 6000. After sometime she sold it at ₹ 5580. Find profit or loss in this transaction. Also find its percentage.

(4) John bought cloth at ₹ 225, out of it, to make a pants he spent ₹ 75. Now he sells this pants to his friend for ₹ 285. Find profit or loss and its percentage.

(5) A mobile repairer bought an old mobile at ₹ 1575. After repairing at ₹ 225, he sold it at ₹ 2160. Then find profit or loss and its percentage.

(6) Nasim bought a water tank, to store water at ₹ 1200. He spends ₹ 300 to cover it with metal sheet. After sometime, they need a big tank, so he sold old tank at ₹ 1200. Find profit or loss and its percentage.

(7) Mayur buys 10 score (cori) kites (1 score = 20 nos.) at ₹ 640. He paid ₹ 60 to bring it to the home, for rickshow. If he got ₹ 770 on selling of total kites, then did he make profit or suffer loss ? How much percentage ?

(8) Rakesh buys a bicyle at ₹ 3000. He sold this bicycle to his friend Mahesh at ₹ 2550. Find profit or loss and its percentage.

(9) Bhupendrabhai bought a packet of sarees at ₹ 6000. He sold this packet to other merchant at ₹ 7200. Find profit or loss and its percentage.

(1) Jitubhai buys a T-shirt at ₹ 500 and sold it to his friend at ₹ 500. Did he get profit or loss ? How much percentage ?

(2) Ramila buys a scooty at ₹ 38,000. After 2 years she sold it at ₹ 30,400. Then, how much percentage profit or loss Ramila gets ?

(3) Aarati bought 10 dresses at ₹ 6300. She paid ₹ 200 extra as expenses. If she sold all the dresses at the cost of ₹ 780 per dress, how much percentage profit or loss does she make ?

(4) Aasifbhai bought a refrigerator at ₹ 10,000. After sometime he sold it to his friend at ₹ 9000, then how much percentage profit or loss does he make ?

(5) Namrataben bought 20 sarees at the cost of ₹ 200 per saree. She got ₹ 5000 on selling of these sarees. Then how much percentage profit or loss does she make ?

Answers

Practice 1

(1) ₹ 25 Loss, 10 % Loss (2) ₹ 150 Loss, 15 % Loss (3) ₹ 460 Loss, 20 % Profit
(4) ₹ 850 Loss, 25 % Profit (5) ₹ 110 Loss, 2 % Loss

Practice 2

(1) 10 % Loss (2) 6 % Profit (3) 7 % Loss (4) 5 % Loss (5) 20 % Profit
(6) 20 % Loss (7) 10 % Profit (8) 1.5 % Loss (9) 20 % Profit

Exercise

(1) No profit - no loss, 0 % profit or loss
(2) 20 % loss (3) 20 % profit (4) 10 % loss (5) 25 % profit

◆ **Project work :** Calculate profit or loss and its percentage of the activity of co-operative society running in your school. (Teacher should give information about the activity of co-operative society, running in the school.)

Profit or loss on C.P. or N.P. of ₹ 100 is the percentage of profit or loss.

When we write profit or loss in percentage (%) unit is not written.