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(Affiliated to CBSE up to +2 Level)

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## Profit and Loss

Every product has a cost price and selling price. Based on the values of these prices, we can calculate the profit gained or the loss incurred for a particular product.

**Profit(P):** The amount gained by selling a product with more than its cost price.

**Loss(L):** The amount the seller incurs after selling the product less than its cost price, is mentioned as a loss.

**Cost Price (CP):** The amount paid for a product or commodity to purchase it is called a cost price.

Also, denoted as CP. This cost price is further classified into two different categories:

- **Fixed Cost:** The fixed cost is constant, it doesn't vary under any circumstances
- **Variable Cost:** It could vary depending as per the number of units

**Selling Price (SP):** The amount for which the product is sold is called Selling Price. It is usually denoted as SP. Also, sometimes called a sale price.

**Marked Price Formula (MP):** This is basically labelled by shopkeepers to offer a discount to the customers in such a way that,

- **Discount = Marked Price - Selling Price**
- **And Discount Percentage = (Discount/Marked price) x 100**

### Profit and Loss Formulas

Now let us find profit formula and loss formula.

- The profit or gain is equal to the selling price minus cost price.
- Loss is equal to cost price minus selling price.

**Profit or Gain = Selling price - Cost Price**  
**Loss = Cost Price - Selling Price**

The formula for the profit and loss percentage is:

$$\text{Profit percentage} = (\text{Profit} / \text{Cost Price}) \times 100$$

$$\text{Loss percentage} = (\text{Loss} / \text{Cost price}) \times 100$$

### Profit and Loss Examples

- If a shopkeeper brings a cloth for Rs.100 and sells it for Rs.120, then he has made a profit of Rs.20/-.
- If a salesperson has bought a textile material for Rs.300 and he has to sell it for Rs.250/-, then he has gone through a loss of Rs.50/-.
- Suppose, Ram brings a football for Rs. 500/- and he sells it to his friend for Rs. 600/-, then Ram has made a profit of Rs.100 with the gain percentage of 20%.

These are some common examples of the profit and loss concept in real life, which we observe regularly.

### Profit and Loss Tricks

1. Profit,  $P = SP - CP$ ;  $SP > CP$
2. Loss,  $L = CP - SP$ ;  $CP > SP$
3.  $P\% = (P/CP) \times 100$
4.  $L\% = (L/CP) \times 100$
5.  $SP = \{(100 + P\%)/100\} \times CP$
6.  $SP = \{(100 - L\%)/100\} \times CP$
7.  $CP = \{100/(100 + P\%)\} \times SP$
8.  $CP = \{100/(100 - L\%)\} \times SP$
9. Discount = MP - SP
10.  $SP = MP - \text{Discount}$
11. For false weight, profit percentage will be  $P\% = (\text{True weight} - \text{false weight} / \text{false weight}) \times 100$ .
12. When there are two successful profits say  $m\%$  and  $n\%$ , then the net percentage profit equals to  $(m+n+mn)/100$
13. When the profit is  $m\%$  and loss is  $n\%$ , then the net % profit or loss will be:  $(m-n-mn)/100$
14. If a product is sold at  $m\%$  profit and then again sold at  $n\%$  profit then the actual cost price of the product will be:  $CP = [100 \times 100 \times P / (100+m)(100+n)]$ . In case of loss,  $CP = [100 \times 100 \times P / (100-m)(100-n)]$
15. If  $P\%$  and  $L\%$  are equal then,  $P = L$  and  $\% \text{loss} = P^2/100$