

Profit and loss

THEORY

Profit and Loss are part and parcel of every commercial transaction. In fact, the entire economy and the concept of capitalism is based on the so called “profit loss”.

Profit and Loss in cases of Individual Transactions

We will first investigate the concept of Profit and Loss in the case of individual transactions. Certain concepts are important in such transaction. They are:

The price at which a person buys a product is the cost price of the product for that person. In other words, the amount paid or expended in either purchasing or producing an object is known as its Cost price (also written as CP)

The price at which a person sells a product is the sales price of the product for that person. In other words, the amount got when an object is sold is called as the selling price (SP) of the product from the seller's point of view.

When a person is able to sell a product at a price higher than its cost price, we say that he has earned a profit. That is,

If $SP > CP$, the difference, $SP - CP$ is known as the profit or gain.

Similarly, if a person sells an item for a price lower than its cost price, we say that a loss has been incurred.

The basic concept of profit and loss is as simple as this. If, however, $SP < CP$, then the difference, $CP - SP$ is called the loss.

It must be noted here that Selling price of the seller is the Cost Price of the buyer.

Thus we can say that in the case of profit the following formula hold true:

1. Profit = $SP - CP$
2. $SP = \text{Profit} + CP$
3. $CP = SP - \text{Profit}$
4. Percentage Profit = $\frac{\text{Profit} \times 100}{CP}$

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Percentage Profit is always calculated on CP unless otherwise stated.

For the above problem, the selling price is given by this method as: Selling price = $1.2 \times 120 = 144$.

Hence we also have the following:

$$1. \quad SP = \left[1 + \frac{\% \text{ Gain}}{100}\right] \times C.P = \frac{(100 + \text{Gain}\%) \times CP}{100}$$
$$2. \quad CP = \frac{100 \times SP}{(100 + \text{Gain}\%)}$$

In case of loss

$$1. \quad \text{Loss} = CP - SP$$
$$2. \quad SP = CP - \text{Loss}$$
$$3. \quad CP = SP + \text{Loss}$$
$$4. \quad \text{Loss}\% = \text{Loss on Rs. } 100 = \frac{\text{Loss} \times 100}{CP}$$

Percentage Loss is always calculate on CP unless otherwise stated.

Profit and Loss a applied to Business and commercial transactions

Profit and Loss when multiple units of a product are Being Bought and

sold: the basic concept of profit and loss remains unchanged fir this situation. However, a common mistake in this type of problem can be avoided if the following basic principal is adopted

Profit or Loss in terms of money can only be calculated wen the number of items bought and sold are equal.

That is, profit or Loss in money terms cannot be calculate unless we equate the number of products bought and sold.

This is normally achieved by equating the number of items bought and sold at 1 or 100 or some other convenient figure as per the problem asked.

Overlooking of this basic fact is one of the most common mistake that students are prone to making in the solving of profit and loss problems.

Profit and loss

The concept of Margin or Contribution per Unit

The difference between the value of the price and the variable cost for a product is known as the margin or the contribution of the product. This margin goes towards the recovery of the fixed costs incurred in selling the product/service.

The concept of the Break-even Point: The break-even is defined as the volume of sale at which there is no profit or no loss. In other words, the sales value in terms of the number of units sold at which the company breaks even is called the break-even sales.

Since for every units of the product the contribution goes towards the fixed costs, as soon as a company sells more than the break-even sales, the company starts earning a profit. Conversely, when the sales value in terms of the number of units is below the break-even sales, the company makes losses.

Note the following formula

Profit = (Actual sales – Break-even) x Contribution per unit

Also in the case of a loss:

Loss = (Break-even sales – Actual sales) x Contribution per unit.

Profit Calculation on the Basic of equating the Amount Spent and the Amount Earned

We have already seen that profit can only be calculated in the case of the number of items being bought and sold being equal. In such a case, we take the difference of the money got and the money given to get the calculation of the profit or the loss in the transaction.

Concept of Mark Up

Traders/businessmen, while selling goods, add a certain percentage on the cost price. This addition is called percentage mark up (if it is in money terms), and the price thus obtained is called as the marked price (this is also the price printed on the product in the shop).

The operative relationship is

$$\text{CP} + \text{Mark up} = \text{Marked price}$$

Or $\text{CP} + \% \text{ Mark up on CP} = \text{Marked price}$