



Discount

It is defined as the amount of rebate given on a fixed price (called as Market Price) of an Item.

$$\text{Discount} = \text{Market Price} - \text{Selling Price}$$

~~CP~~ ✓ Market Price ✓ SP

discount,
offer.

$$\text{Discount \%} = \frac{(\text{MP} - \text{SP})}{\text{MP}} \times 100$$

Eg:-

Land (item)

Year: 2001

25,000 (CP)

2022

5,00,000 MP

$$D = 5,00,000 - 4,00,000$$

$$= 1,00,000 - \text{offer}$$

Sold - 4,00,000
SP

$$\text{Discount \%} \times \text{MP} = \text{MP}(100) - \text{SP}(100)$$

$$\text{SP}(100) = \text{MP}(100) - \text{MP}(D)$$

$$\text{SP} = \frac{\text{MP}(100 - D)}{100}$$

$$\text{SP}(100) = \text{MP}(100 - D)$$

$$\text{MP} = \frac{\text{SP} \times 100}{100 - D}$$

~~Formula~~



Single Equivalent Discount

(Successive Discount) — Single Equivalent Discount

Q.P

Value

Percentage

- Traditional Method
- Normal Method ✓
- formula Method

$$a + b - \frac{ab}{100}$$

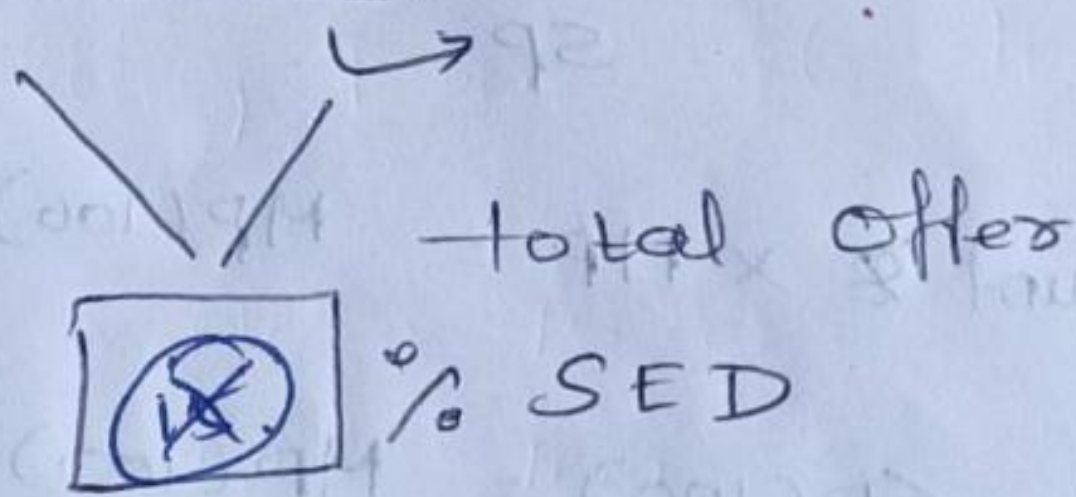
$$a + b - \frac{ab}{100}$$

Book Shop

to buy book - Rs 200

offers = 10% 5% **Successive Discount**

(bargaining offers)



Example :-

Book Price = Rs 200

Seller Successive Discount = 10%, 5%

Selling Price = ?



Traditional Method :-

$$\text{Book rate} = 200 \times \frac{10}{100} = 20$$

$$= 200 - 20$$

$$= 180$$

$$\Rightarrow 180 \times \frac{5}{100} = 9$$

$$= 171 \quad (180 - 9)$$

$$SP = Rs 171$$

$$\text{Discount} = 20 + 9 = 29$$

Normal Method

B.R x offer

$$= 200 \times \frac{90}{100} \times \frac{95}{100}$$

(100% - 10%) (100 - 5%)

$$= 19 \times 9 = \boxed{171}$$

$$D = 200 - 171$$

$$= 29$$

formula

a = 1st D

b = 2nd D

$$a + b - \frac{ab}{100}$$

$$\% \rightarrow 10 + 5 - \frac{50}{100} = 15 - \frac{50}{100} = 15 - 0.5 = 14.5\%$$

$$D = \frac{14.5}{100} \times 200$$

$$D = 29.0$$

$$SP = 200 - 29$$

$$= \boxed{171}$$

Easier

$$= 14.5\% \text{ (or)} \underline{10\% + 5\%}$$

SED

Same.



The Marked Price of an article is Rs 500. It is sold at successive discounts of 20% and 10%. The selling price of the article is?

MP = 500

Successive Discount = 20% 10%

$$SP = 500 \times \frac{80}{100} \times \frac{90}{100}$$

$$= 5 \times 8 \times 9 = 40 \times 9 = 360$$

SP = 360

Discount = MP - SP = 500 - 360 = 140

The selling price of the article is 360

An item is marked for Rs 240 for sale. If two successive discount of 10% and 5% are allowed on the sale price, the selling price of the article is

$$SP = 240 \times \frac{90}{100} \times \frac{95}{100}$$

10 + 5 + 50/100

$$= \frac{6 \times 9 \times 19}{5} = \frac{171 \times 6}{5} = \frac{1026}{5}$$

D = 14.5% 85.5

$$S.P = 240 \times \frac{85.5}{100}$$

$$= 17.1 \times 12$$

$$= 205.2$$

= 205 1/5 = 205.2

= 240 - 205.2

$$\frac{19 \times 9}{171 \ 8}$$

205

$$= \frac{1026}{5}$$

$$\frac{1026}{101 \ 4}$$

$$\frac{26}{25}$$

$$\frac{1}{1}$$



A single ^{discount} equivalent to successive discounts of 10%, 20% and 25% is

$$S.E.D = \frac{90}{100} \times \frac{80}{100} \times \frac{75}{100} = 0.54 = 100 - 54 = 46\%$$

Best solution is formula Method

10% 20% 25%

$$\text{Stage 1 } 10 + 20 - \frac{200}{100}$$

$$= 30 - 2$$

$$28\%$$

$$\text{Stage 2 } 28 + 25 - \frac{28 \times 25}{100}$$

$$53 - \frac{700}{100}$$

$$46\%$$

List price of an article at a show room is Rs 2000 and it is being sold at successive discounts of 20% and 10%. Its selling price will be? **1440**

$$SP = 2000 \times \frac{80}{100} \times \frac{90}{100}$$

$$= 20 \times 72$$

$$= \underline{1440}$$



The Market Price of a watch is Rs 800. A shopkeeper gives you two successive discounts and sells the watch at Rs 612. If the first discount is 10% the second discount is

NormalSol

$$MP = 800$$

$$1^{st} D = 10\%$$

$$2^{nd} D = ?$$

$$SP = 612$$

$$800 \times \frac{90}{100} \times \frac{100-x}{100} = 612$$

$$800 \times \frac{90}{100} \times \frac{100-x}{100} = 612$$

$$100-x = \frac{612 \times 100}{8 \times 9}$$

$$100-x = \frac{17 \times 5}{1}$$

$$100-x = 85$$

$$x = 100 - 85$$

$$x = 15\%$$

∴ Second discount is 15%

The price of a clock is Rs 160. The customer buys it for Rs 122.40 after two successive discounts. If the second discount is 15% then the first discount is

$$160 \times \frac{100-x}{100} \times \frac{85}{100} = 122.40$$

$$100-x = \frac{122.40 \times 25}{17 \times 2}$$

$$= \frac{122.40 \times 25}{61.20}$$

$$= \frac{1530}{17} = 90$$

$$100-x = \frac{122.40 \times 10}{16 \times 85}$$

$$100-x = 90$$

$$100-x = 90$$

$$x = 100 - 90$$

$$x = 10\%$$



The Market Price of a piano was Rs 15000. The Customer buys it for Rs 9720 after three successive Discounts of 20%, 10% and x% respectively on it. Then the 3rd discount is?

$$15000 \times \frac{80}{100} \times \frac{90}{100} \times \frac{100-x}{100} = 9720$$

$$100-x = \frac{9720 \times 100^2}{15 \times 8 \times 9}$$

$$= \frac{4054500}{72}$$

$$100-x = 45 \times 2$$

$$100-x = 90$$

$$x = 100 - 90 = 10\%$$

∴ The third discount is 10%.

A book was sold for Rs 6300 after giving two successive discounts of 12½% and 10%. Find the Market Price.

$$SP = 6300$$

$$x \times \frac{100 - \frac{25}{2}}{100} \times \frac{90}{100} = 6300$$

$$x \times \frac{200 - 25}{200} \times \frac{90}{100} = 6300$$

$$x \times \frac{175 \cdot 35}{40} \times \frac{90}{100} = 6300$$

$$x = \frac{6300 \times 100 \times 40}{35 \times 9}$$

$$x = 200 \times 40 = 8000$$

$$MP = 8000$$

Don't convert to decimal.

$$\frac{175}{2} \times \frac{1}{100}$$



A shopkeeper gives two successive discount on an article marked Rs 450. The 1st discount is 10%. If the customer pays Rs 344.25 for the article. The second discount is

$$\text{Ans} = \underline{\underline{15\%}}$$

Profit / Loss Percentage.

A shopkeeper marks his watch at 20% above the cost price and allows the purchaser a discount of 10% of cash buying. What profit percent does he make.

$$MP = C.P + 20\%$$

$$CP = 100\%$$

$$D = 10\%$$

$$MP = 120\%$$

$$P/L = ?$$

$$D = 10\% \leftarrow 12RS$$

$$P/L = ?$$

$$SP\% = 120\% - 10\%$$

$$a = MP =$$

$$= 20 - 10 = \frac{200}{100}$$

$$= 20 - 12 = 8\%$$

$$\therefore \text{Profit} = 8\%$$

$$\frac{120 - 12}{12}$$

$$= 108\%$$

$$P = 100 - 108$$

$$P = 8\%$$



A trade man marks his goods at 20% above the cost price. He allows his customer a discount of 8% on market price. Find out the profit per cent

CP = 100%

MP = 120%

D = 8%

Profit % = ?

CP	MP	D	P
100	120%	8%	?

$1.2 \times 8 = 9.6$
 $SP = 120 - 9.6$

$$\begin{array}{r} 120 \\ - 9.6 \\ \hline 110.4 \end{array}$$

SP = 110.4

P = 10.4%

Formula

$$\frac{MP(MP - D)}{a + b + \frac{ab}{100}}$$

$$20 - 8 - \frac{160}{100}$$

$$20 - 8 - 1.6$$

$$20 - 9.6$$

$$= 10.4$$

A shopkeeper marks the price of an item keeping 20% profit, if he offers on the marked price, his gain

Percentage is

$$a + b + \frac{ab}{100}$$

$$20 - \frac{25}{2} + \frac{20 \times -25}{100}$$

$$20 - \frac{25}{2} - \frac{250}{100} = 20 - 12.5 - 2.5$$

$$= 20 - 15$$

$$= 5\%$$

gain % = 5%



A trade man marks his goods 10% above the cost price. If he allow his customer 10% discount on the marked price, how much Profit or loss does he make.

CP	MP	D	P/L %
100%	110%	10%	

Rs 11

$$SP = 110 - 11 = 99$$

$$Loss = 1\%$$

-1%

$$a + b + \frac{ab}{100}$$

$$10 + 10 - \frac{100}{100}$$

$$10 - 10 - 1$$

$$10 - 11$$

$$= -1\%$$

How much hike?

To gain 8% after allowing a discount of 10% by what percent cost price should be hiked in the list price.

$$a + b + \frac{ab}{100} = P/L\%$$

CP	M.P	D	P/L
100%	?	10%	P 8%

$$x - 10 - \frac{10x}{100} = 8$$

$$\frac{100x - 1000 - 10x}{100} = 8$$

$$100x - 1000 - 10x = 800$$

$$90x = 800 + 1000$$

$$90x = 1800$$

$$x = \frac{1800}{90}$$

$$x = 20\%$$

A merchant allows a discount of 10% on marked price for the cash payment. To make a profit of 17% he must mark his goods higher than their cost price by

CP	MP	D	P%
100	?	10%	17%

$$a + b + \frac{ab}{100} = P\%$$

$$x + 10 - \frac{10x}{100} = 17$$

$$100x - 1000 - 10x = 1700$$

$$90x = 1700 + 1000$$

$$90x = 2700$$

$$x = \frac{2700}{90} = 30\%$$