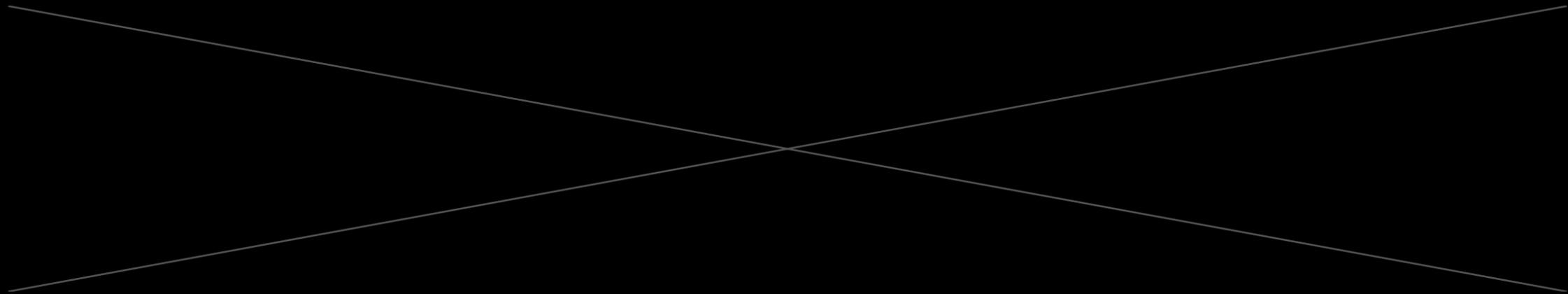


Profit, Loss & Discount



(D) \rightarrow **DISCOUNT** \rightarrow बट्टा

* $\text{Discount} = \text{MP} - \text{SP}$

* $\%D = \frac{D}{\text{MP}} \times 100$

* $\text{SP} = \text{MP} \times \left(\frac{100 - D}{100} \right)$

* Successive Discount (कृमिक बट्टा) \Rightarrow

$$x + y - \frac{x \times y}{100}$$

* MP/MRP
 \Downarrow
Marked Price
 \Downarrow
(अंकित मूल्य)

Successive Discount :-

$$SP = MP \times \left(\frac{100 - D_1}{100} \right) \times \left(\frac{100 - D_2}{100} \right) \dots$$

छूट / बट्टा $\rightarrow D$

अंकित मूल्य $\rightarrow MP$

वृथ मूल्य $\rightarrow CP$

विकृत मूल्य $\rightarrow SP$

Q. ① यदि एक वस्तु का अंकित मूल्य 2850 ₹ है और इस पर दी जाने वाली छूट 21% है तो इसका SP = ?

if the marked price of an article is 2850 Rs. and the discount is 21%. then find the SP ?

$$MP \rightarrow 2850 \text{ Rs.}$$

$$D \rightarrow 21\%$$

$$SP \rightarrow ?$$

$$SP = MP \times \left(\frac{100 - D}{100} \right)$$

$$SP = 2850 \times \left(\frac{100 - 21}{100} \right)$$

$$SP = 2850 \times \frac{79}{100}$$

$$SP = \frac{285 \times 79}{10}$$

$$SP = \frac{22515}{10}$$

$$SP = 2251.5 \quad \underline{\text{Ans}}$$

Q. (2) जॉन ने एक लैपटॉप, उसके अंकित मूल्य पर 25% की छूट पर खरीदा। यदि उसने लैपटॉप के लिए 28,473 रु. अदा किए तो उसका अंकित मू. क्या था

John bought a Laptop at 25% discount on the MRP. If he paid 28473 Rs. for the laptop. What was its marked price?

$$SP = MP \times \left(\frac{100 - D}{100} \right)$$

$$28473 = MP \times \left(\frac{100 - 25}{100} \right)$$

$$MP \rightarrow ?$$

$$D \rightarrow 25\%$$

$$SP \rightarrow 28,473 \text{ Rs.}$$

$$\frac{28473 \times 100}{75} = MP$$

$$9491 \times 4 = MP$$

$$37964 = MP$$

Ans

Q. (3) 80 Rs. अंकित मूल्य वाली एक वस्तु को 68 Rs. में बेचा जाता है तो छूट की दर बताओ ?

An item whose MP is 80 Rs. & is sold for 68 Rs.
Find the rate of discount ?

$$MP \rightarrow 80 \text{ Rs.}$$

$$SP \rightarrow 68 \text{ Rs.}$$

$$\%D \rightarrow ?$$

$$\%D = \frac{D}{MP} \times 100$$

$$D = MP - SP$$

$$D = 80 - 68$$

$$D = 12 \text{ Rs.}$$

$$\%D = \frac{D}{MP} \times 100$$

$$\%D = \frac{12}{80} \times 100$$

~~120~~
40% |

$$\%D = 3 \times 5$$

↓

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

Q. (4) 6000 Rs. के लेबल मूल्य पर दो क्रमागत छूट की वजह से विकृत मूल्य घटकर कितना हो जाएगा यदि 10% और 20% की क्रमिक छूट दी गई हो।

Due to two consecutive discount at the labeled price of 6000 Rs. the selling price would be decreases if two consecutive discount of 10% and 20% are given

$$\begin{array}{l}
 \text{MP} \rightarrow 6000 \\
 \text{SP} \rightarrow ? \\
 D_1 \rightarrow 10\% \\
 D_2 \rightarrow 20\%
 \end{array}
 \left|
 \begin{array}{l}
 \text{SP} = \text{MP} \times \left(\frac{100-D_1}{100}\right) \times \left(\frac{100-D_2}{100}\right) \\
 \text{SP} = 6000 \times \frac{90}{100} \times \frac{80}{100}
 \end{array}
 \right.$$

$$\text{SP} = 6 \times 90 \times 8$$

$$\text{SP} = \boxed{4320} \text{ Rs.}$$

Q. (6) एक वस्तु के मूल्य में 20% की वृद्धि की जाती है और उस पर प्रत्येक 5% की दो क्रमिक छूट दी जाती है इस स्थिति में वस्तु का SP, उसके CP से कितना अधिक होगा ?

The price of an article is increased by 20% & then two successive discounts of 5% each are allowed. The SP of the article is _____ above its cost price.

Let

$$CP \rightarrow 100$$

$$D_1 \rightarrow 5\% \rightarrow \frac{95}{100}$$

$$D_2 \rightarrow 5\% \rightarrow \frac{95}{100}$$

$$\text{incr} \rightarrow 20\% \uparrow \rightarrow \frac{120}{100}$$

$$\left(\frac{108.3 - 100}{100} \times 100 \right) \%$$



$$SP \rightarrow 100 \times \frac{120}{100} \times \frac{95}{100} \times \frac{95}{100}$$

$$\begin{array}{r} 108.3 \\ - 100.0 \\ \hline \times \times 8.3 \end{array}$$

$$SP = \frac{\overset{3}{\cancel{12}} \times \overset{19}{\cancel{95}} \times \overset{19}{\cancel{95}}}{\underset{20}{\cancel{100}} \times \underset{10}{\cancel{10}}}$$

$$SP = \frac{3 \times 19 \times 19}{10}$$

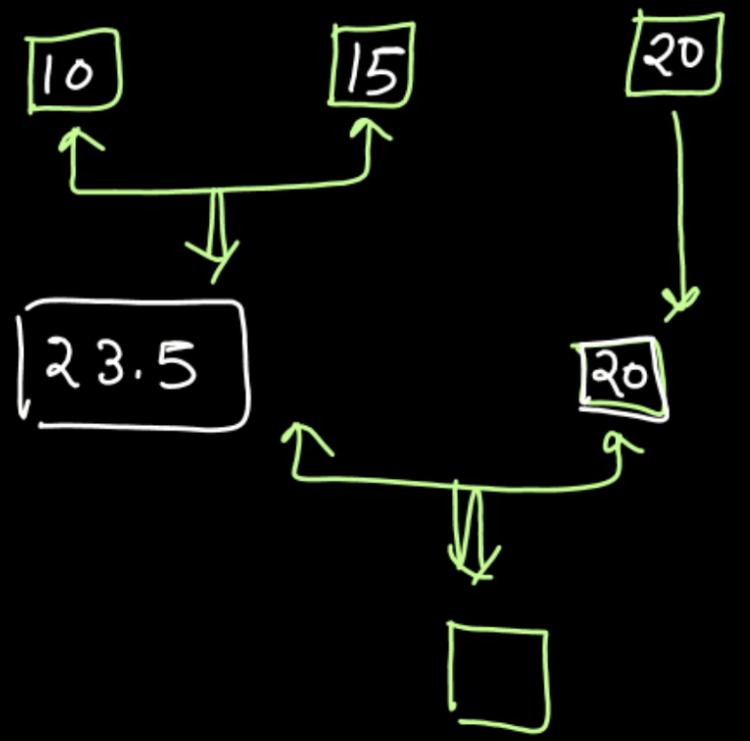
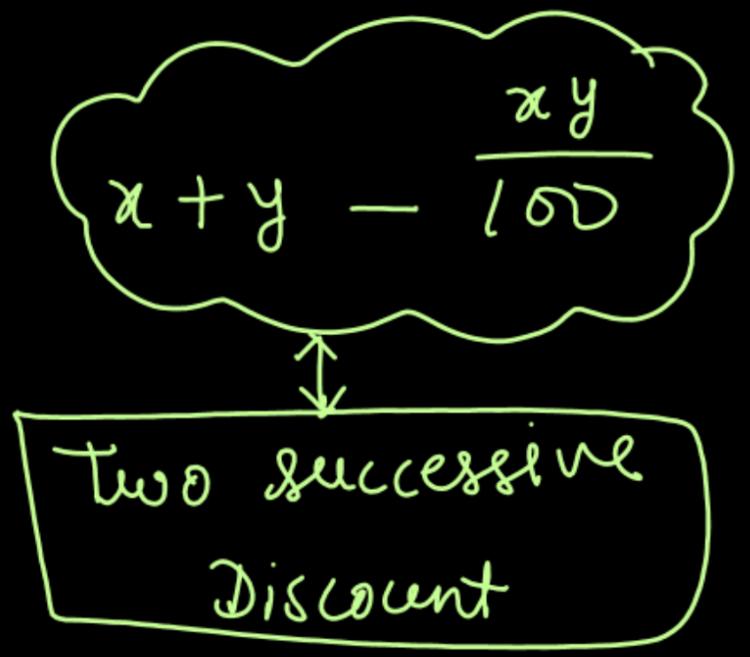
$$SP = \frac{1083}{10}$$

$$SP = 108.3$$

Rs. 8.3 Ans

Q. 7) 10%, 15% और 20% की क्रमिक छूटों के
 तुल्य एकल छूट सात करो ?

find the single discount which is equivalent to
 successive discounts of 10%, 15% & 20%.



$$x + y = \frac{xy}{100}$$

$$10 + 15 = \frac{10 \times 15}{100}$$

$$25 = \left(\frac{15\cancel{0}}{10\cancel{0}} \right)$$

$$25 = 1.5$$

$$\boxed{23.5}$$

$$x + y = \frac{xy}{100}$$

$$23.5 + 20 = \left(\frac{23.5 \times 20}{100} \right)$$

$$43.5 = \left(\frac{\overset{47}{\cancel{235}} \times \overset{1}{\cancel{20}}}{\underset{\cancel{50}}{10} \times 100} \right)$$

$$43.5 = 4.7$$

$$43.5$$

$$- 4.7$$

$$\boxed{38.8} \text{ Ans}$$

Q. 8 एक वस्तु का सूची मूल्य 200 ₹. है दो क्रमिक discount के बाद एक ग्राहक इसे 150 ₹. में खरीदता है। यदि एक discount 10% है तो दूसरा D% = ?

The listed price of an article is 200 ₹. A customer purchase it at 150 ₹. after two successive discounts. If one discount is 10% then find the other discount in % ?

MP → 200 ₹.
 CP → 150 ₹.
 D₁ → 10%
 D₂ → ?

$$150 = 200 \times \left(\frac{100-10}{100}\right) \times \left(\frac{100-D_2}{100}\right)$$

$$150 = 200 \times \frac{90}{100} \times \left(\frac{100-D_2}{100}\right)$$

$$\frac{150}{2 \times \frac{90}{100}} = \frac{100-D_2}{100}$$

$$\frac{5}{6} \leftarrow \frac{100-D_2}{100}$$

$$\frac{5 \times 100}{6} = 100 - D_2$$

$$D_2 = \frac{100}{1} - \frac{500}{6}$$

$$D_2 = \frac{600 - 500}{6}$$

$$D_2 = \frac{600 - 500}{6}$$

$$D_2 = \frac{100}{6} = 16.66\%$$

$$D_2 = \frac{50}{3} \%$$

OR

$$D_2 = 16.66\%$$

Ans

4. (9) राम ने एक TV set अंकित मू. पर 25% discount के बाद धरे हुए मू. पर 15% के extra discount पर खरीदा। यदि MP, 12000 Rs. था तो उसने TV सेट किस मू. पर खरीदा ?

Ram purchased a TV set with an additional 15% discount on the reduced price after deducting 25% discount on the labeled price. If the MP was 12000 Rs. At what price did he purchase the TV set ?

$$MP = 12,000 \text{ Rs.}$$

$$D \rightarrow 25\%$$

$$12000 \times \frac{75}{100} \times \frac{85}{100} \Rightarrow \square$$

$$6 \times 15 \times 85 \Rightarrow 7650 \text{ Ans}$$

Q. (16) यदि SP 1680 हो तो 16% का loss होता है। यदि 8% discount देने के बाद भी 15% का लाभ होता हो, तो उत्पाद का MP कितना होना चाहिए?

If the SP is 1680 Rs. & there is a loss of 16%. If there is a profit of 15% even after giving 8% discount then what should be the MP of the product?

$$SP = 1680 \text{ Rs.}$$

$$/L = 16\%$$

$$SP = CP \times \left(\frac{100-L}{100}\right)$$

$$1680 = CP \times \left(\frac{100-16}{100}\right)$$

$$1680 = CP \times \frac{84}{100}$$

$$\frac{1680 \times 100}{84} = CP$$

$$CP = 2000$$

$$CP \rightarrow 2000$$

$$P \rightarrow 15\%$$

$$SP = 2000 \times \frac{115}{100}$$

$$SP = 20 \times 115$$

$$SP = 2300$$

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

$$2300 = MP \times \frac{100-8}{100}$$

$$2300 = MP \times \frac{92}{100}$$

$$MP = \frac{2300 \times 100}{92}$$

$$MP = 2500$$

$$MP \Rightarrow 2500$$

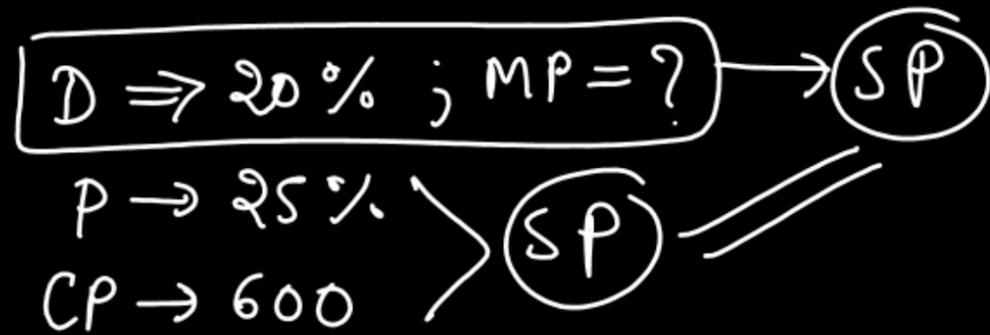
$$SP = CP \times \left(\frac{100+P}{100}\right)$$

$$SP = 2000 \times \frac{100+15}{100}$$

$$SP = 2000 \times \frac{115}{100}$$

Q. (ii) एक दुकानदार अपने ग्राहकों को 20% discount देकर भी 25% का लाभ कमाता है। उस वस्तु का MRP क्या होगा जिसका क्रय मूल्य 600 Rs. हो ?

A shopkeeper allows a discount of 20% to his customers, and still gains 25%. Find the MRP of an article whose cost price 600 Rs ?



$$600 \times \frac{100+25}{100} = MP \times \frac{(100-20)}{100}$$

$$600 \times 1.25 = MP \times 0.80$$

$$750 = MP \times 0.80$$

$$MP = \frac{750}{0.80} = 937.5$$

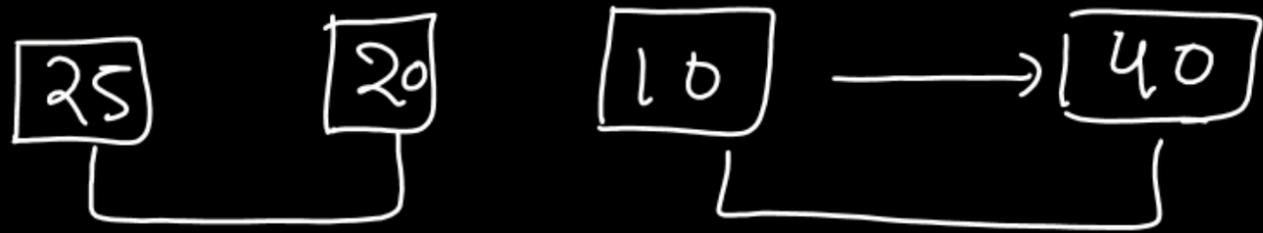
$$\frac{15 \times 125}{2} = MP$$

$$\frac{1875}{2} = MP$$

Ans $937.5 = MP$

Q. 12) 25%, 20%, और 10% के क्रमिक बरों के समतुल्य एकल बरा क्या होगा ?

_____ is a single discount equivalent to 25%, 20% & 10% successive discounts ?



$$x + y = \frac{xy}{100}$$

$$25 + 20 = \frac{25 \times 20}{100}$$

$$45 - 5 \Rightarrow \boxed{40}$$

$$x + y = \frac{xy}{100}$$

$$10 + 40 = \frac{10 \times 40}{100}$$

$$50 - 4 \Rightarrow \boxed{46\%} \text{ Ans}$$

Q. (13) अंकित मू. पर 20% का discount देने के बाद किशोर 12% का लाभ कमाता है। तो अंकित मू., ब्य मू. से कितने % अधिक है?

After giving 20% discount on MRP, Kishore earns a profit of 12%. How much is the MRP is more than the cost price?

$\boxed{CP \rightarrow 100}$ let
 $\%P \rightarrow 12\%$
 $SP = CP \times \left(\frac{100+P}{100}\right)$
 $SP = 100 \times \frac{112}{100}$

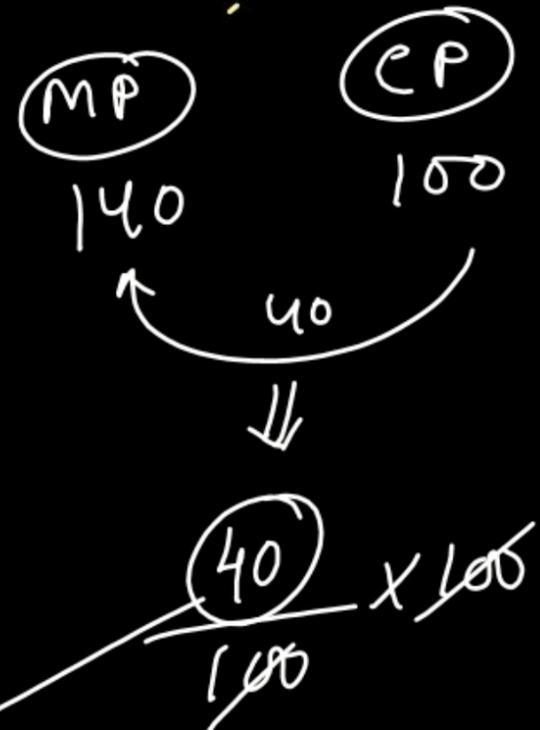
$\boxed{SP = 112}$

$SP = 112$
 $D = 20\%$
 $SP = MP \times \left(\frac{100-D}{100}\right)$
 $112 = MP \times \left(\frac{100-20}{100}\right)$
 $112 = MP \times \frac{80}{100}$

$\frac{56 \times 28 \times 14}{112 \times 10} = MP$
 $\frac{84}{1} = MP$

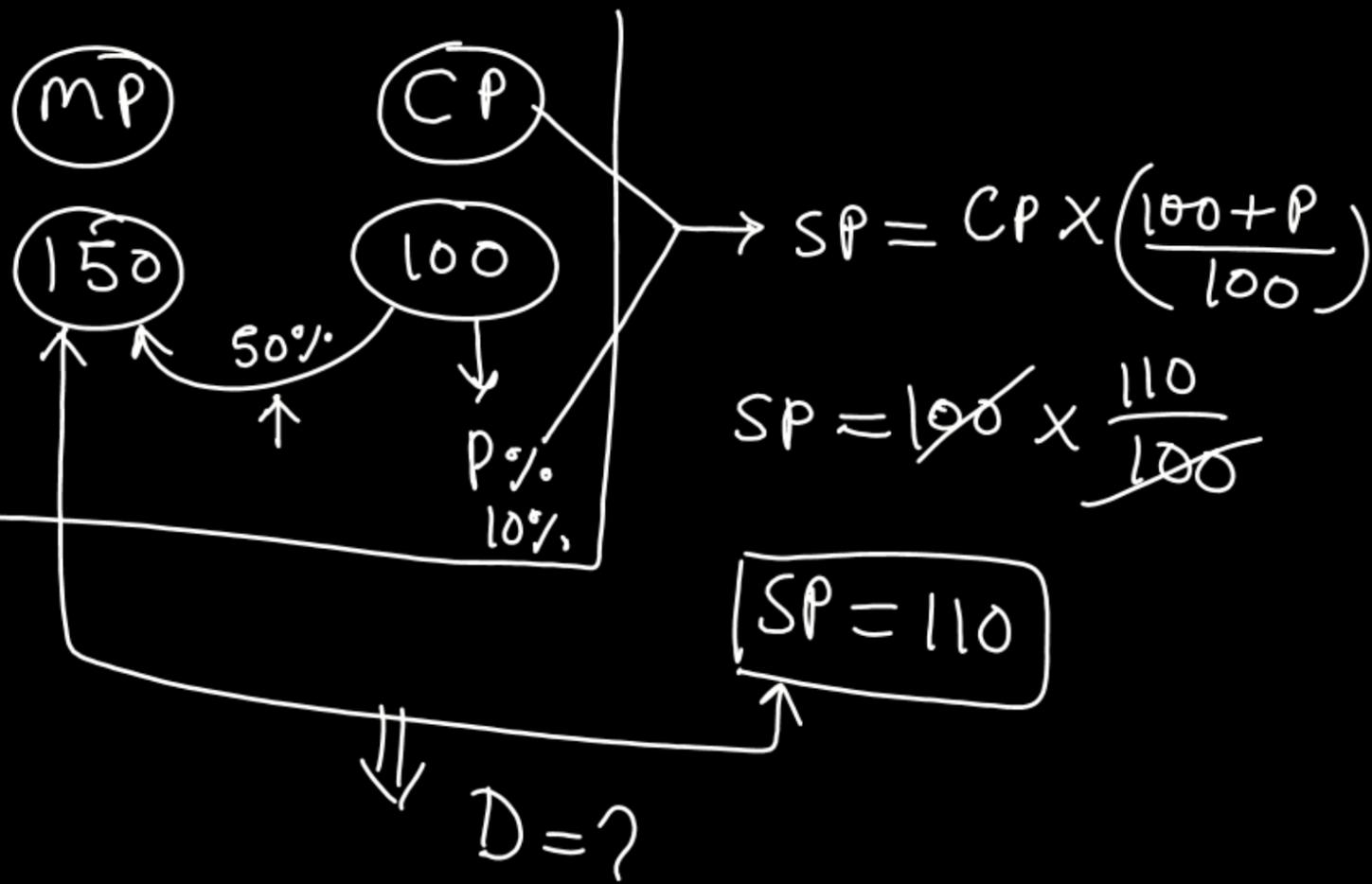
$\boxed{MP = 140}$

$\boxed{40\%}$



Q. (14) अपरणा एक वस्तु पर उसके ब्य मू. से 50% अधिक अंकित करती है। 10% लाभ पाने के लिए कितने % discount देना चाहिए ?

Aparna changes the MP of an item to 50% above its Cost Price what % of discount is allowed to gain 10% ?



$$SP = MP \times \left(\frac{100 - D}{100} \right)$$

$$110 = 150 \times \left(\frac{100 - D}{100} \right)$$

$$110 = \frac{3}{150} \times \frac{100 - D}{100}$$

$$\frac{110 \times 2}{3} = 100 - D$$

$$\frac{220}{3} = 100 - D$$

$$D = \frac{100}{1} - \frac{220}{3}$$

$$D = \frac{300 - 220}{3}$$

$$D = \frac{80}{3} \Rightarrow 26.66$$

Some thing

Ans

Q. (15) एक दुकानदार अपने ग्राहक को किसी वस्तु के MP पर 10% का discount देता है, फिर भी वह 26% लाभ प्राप्त करता है। यदि MP 560 Rs हो तो CP = ?

A shopkeeper gives his customer 10% discount on the MP of an item. yet he gets 26% profit. if the MP is 560 Rs.

then find CP ?

$$D \rightarrow 10\%$$

$$MP \rightarrow 560$$

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

$$SP = 560 \times \frac{90}{100}$$

$$SP = 504$$

$$P \rightarrow 26\%$$

$$SP = CP \times \left(\frac{100 + P}{100} \right)$$

$$504 = CP \times \left(\frac{100 + 26}{100} \right)$$

$$504 = CP \times \frac{126}{100}$$

$$\frac{252 \times 844}{504 \times 100} = CP \Rightarrow$$

$$\frac{126}{126} = CP \Rightarrow$$

$$\boxed{400} \text{ Ans}$$

Q. (17) नेहा ने 30% discount पर 1300 Rs. में एक Book खरीदी और इसे 30% लाभ पर बेच दिया। उसने कितना लाभ कमाया?

Neha bought a book for 1300 Rs. at a 30% discount and sold it at a 30% profit. How much did she earn?

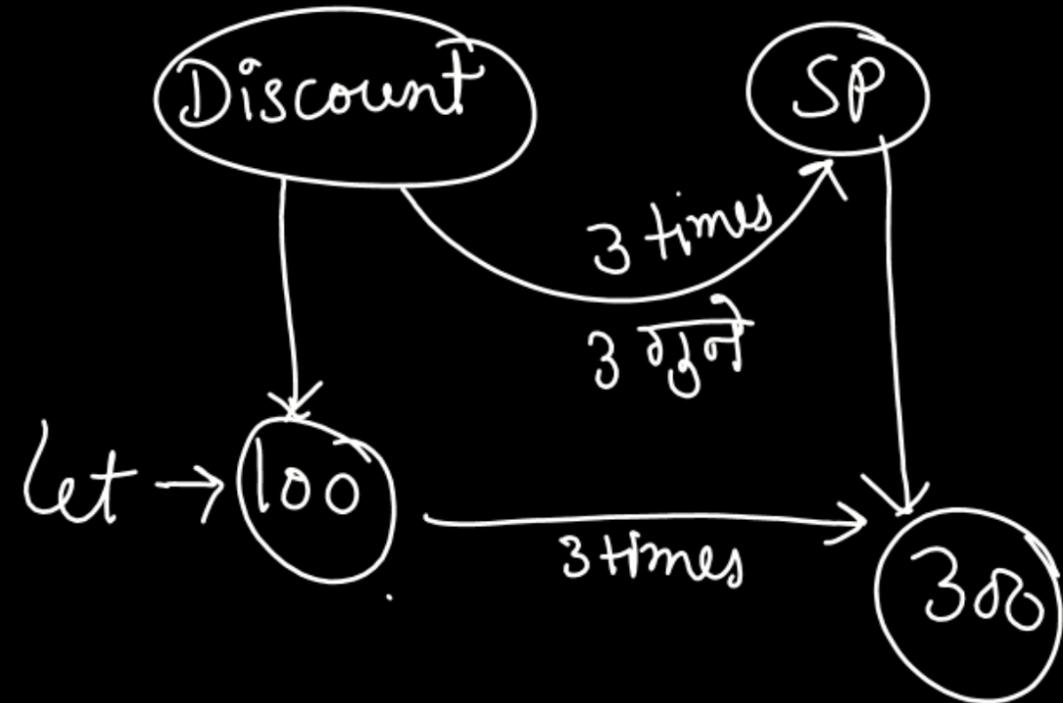
$$\begin{array}{l} CP \rightarrow 1300 \text{ Rs.} \\ P \rightarrow 30\% \end{array} \rightarrow SP = CP \times \left(\frac{100+P}{100} \right)$$
$$SP = 1300 \times \frac{130}{100}$$

$$SP = 1690$$

$$\text{Profit} = SP - CP$$
$$\text{Profit} = 1690 - 1300$$
$$\rightarrow \underline{\underline{390}} \text{ Ans}$$

Q. (18) यदि किसी वस्तु का SP, इस पर प्रदान की गई छूट (discount) के 3 गुने के बराबर है। और यदि D%, Profit % के बराबर है तो प्रदान किया गया discount और CP का अनुपात = ?

If the SP of an article is three times the discount offered, & if the % D is equal to the % P, then find the ratio of the discount offered to the CP.



$$D = MP - SP$$

$$100 = MP - 300$$

$$100 + 300 = MP$$

$$400 = MP$$

then find the ratio

$$\% D = \% P$$

$$\% D = \frac{D}{MP} \times 100$$

$$\% D = \frac{100}{400} \times 100 = 25$$

$$\% D = 25\%$$

$$\therefore \% D = \% P$$

\Downarrow

$$25\% = \% P$$

$$SP = 300$$

CP ?

$$SP = CP \times \left(\frac{100 + P}{100} \right)$$

$$300 = CP \times \frac{125}{100}$$

$$\frac{300 \times 4}{5} = CP$$

$$CP = 60 \times 4$$

$$CP = 240$$

$$\frac{D}{CP} = \frac{5}{12}$$

$$\frac{D}{CP} = \frac{5}{12}$$

OR

$$D : CP \\ 5 : 12$$

Ans