

11/12/2025

6. Discount

$$\text{Profit/Loss} = \frac{CP}{SP}$$

$$\text{Discount} = \frac{MP}{SP} \leftarrow \begin{matrix} \text{marked} \\ \text{price} \end{matrix}$$

(20% OFF)

$$MP \rightarrow 2000$$

$$\begin{array}{ccc} -D\% & & [-400] \\ SP & \rightarrow & [1600] \end{array}$$

$$\begin{array}{ccc} +P\% & & [600] \rightarrow 60\% \\ CP & \rightarrow & [1000] \end{array}$$

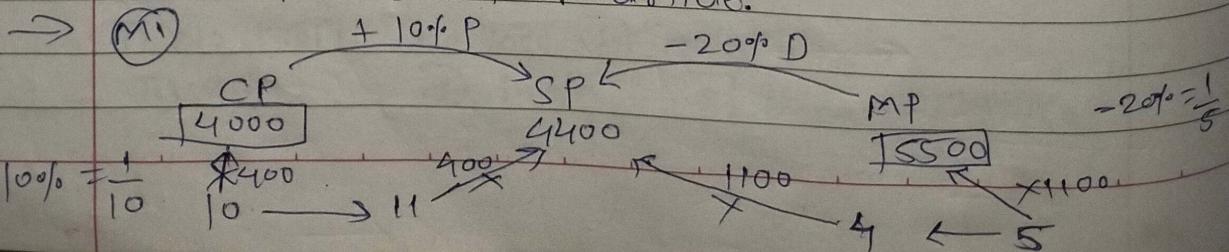


$$\begin{array}{l} CP : MP \\ [(100 - D\%)] : [100 + P\%] \end{array}$$

$$20\% D = \frac{1}{5}$$

$$\begin{array}{ccc} 5 & \xrightarrow{-1} & 4 \\ MP & & SP \end{array}$$

- 1) A man sells an article for ₹. 4400, and make a profit of 10% after giving a discount of 20%. Find CP and MP of article.

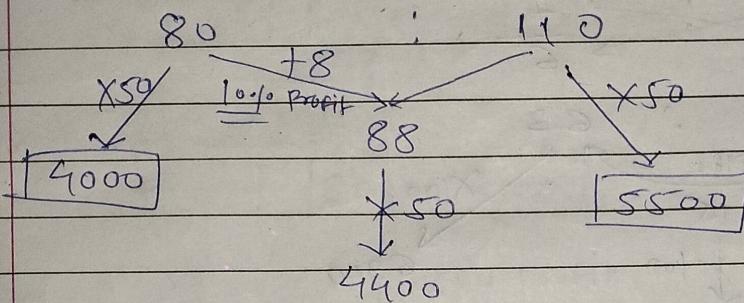


$$TCP = 4000$$

$$MP = 5500$$

(102)

$$\begin{array}{l} CP : MP \\ (100 - D\%) : (100 + P\%) \end{array}$$



- 2) A man sells an article at profit of $16\frac{2}{3}\%$ after giving a discount of $11\frac{1}{3}\%$. If difference between CP and MP is 1500. Find the CP, SP and MP of article.

$$\begin{array}{ccc} CP & SP & MP \\ \xrightarrow{+16\frac{2}{3}\% = \frac{1}{6}} & \xleftarrow{-11\frac{1}{3}\% = \frac{1}{9}} & \end{array}$$

$$6 \quad 7 \quad 8$$

make SP ratio same

$$6 \times 8 \quad 7 \times 8 \quad 9 \times 7$$

$$48 : 56 : 63$$

Difference between CP and MP = 1500 = Diff ratio of CP and MP

$$(63 - 48) = 15$$

$$1500 \rightarrow 15$$

$$100 \leftarrow 1$$

$$CP = 48 \times 100 = 4800$$

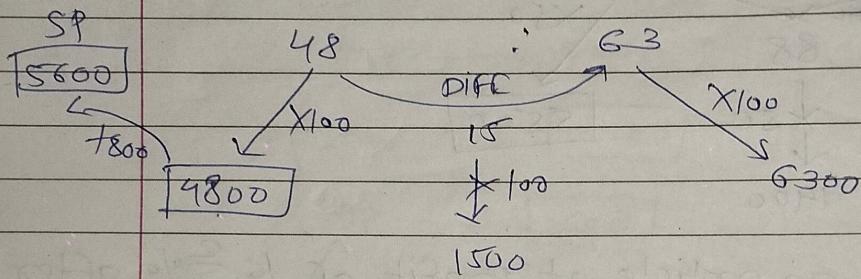
$$SP = 56 \times 100 = 5600$$

$$MP = 63 \times 100 = 6300$$

(1) (M2)

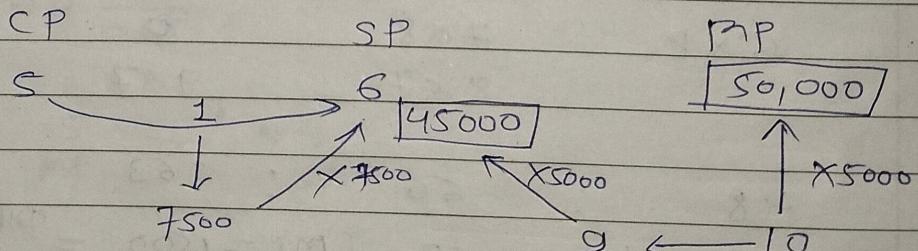
$$\begin{array}{l} CP : MP \quad \text{use for fraction} \\ (1-D) : (1+P) \\ (1 - \frac{1}{9}) : (1 + \frac{1}{6}) \end{array}$$

$$\frac{8}{9} : \frac{7}{6}$$



- 3) A dealer makes a profit of 20% even after giving a 10% discount on the advertised price of a scooter. If he makes a profit of Rs. 7500 on the sale of the scooter. The advertised price was:

$$20\% = \frac{1}{5}, 10\% = \frac{1}{10}$$

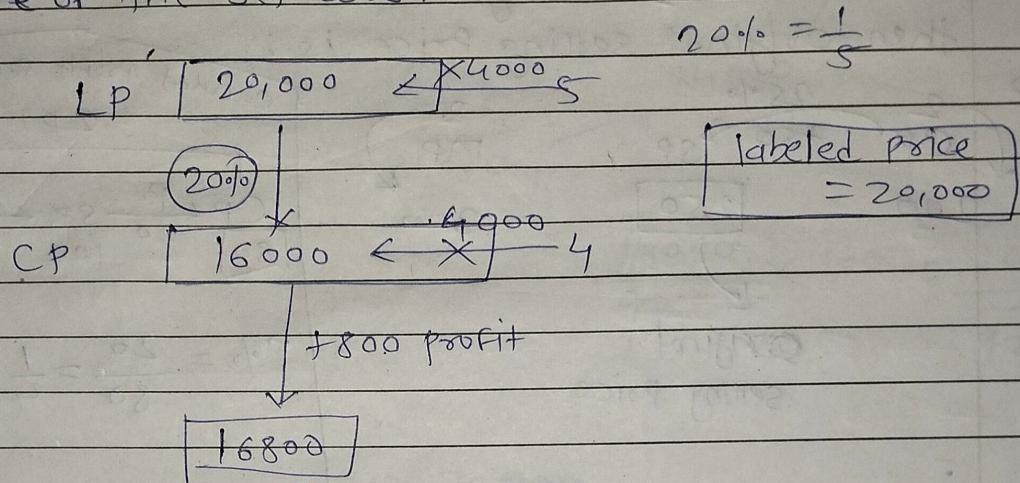


$$MP = 50,000$$

(M2)

CP $(100-D)$	MP $(100+P)$	$6 \rightarrow 2500$
90 $\downarrow 20\%$ $18 \rightarrow 7500$	120	$12 \rightarrow 5000$
		$120 \rightarrow 50,000$

Q) Dharmendra bought a television set with 20% discount on the labeled price. She made a profit of Rs. 800 by selling it for Rs. 16,800. The labeled price of the set was:

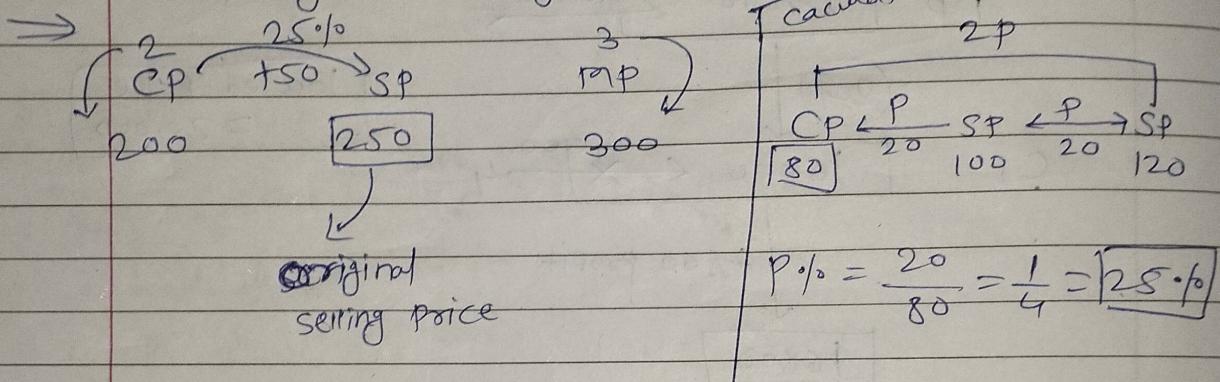


Q) A shopkeeper allows 23% commission on his advertised price and still makes a profit of 10%. If he gains Rs. 56 on one item, his advertised price.

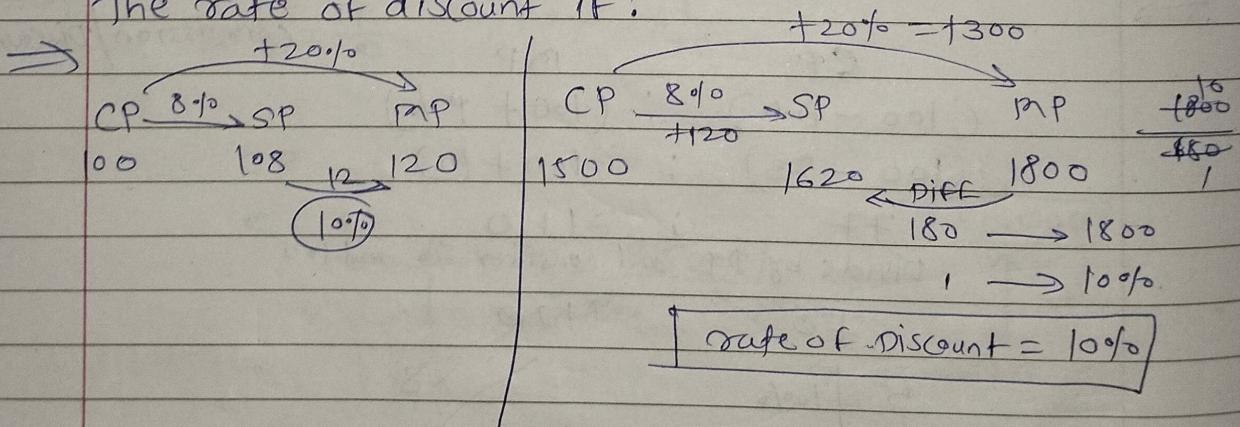


CP	MP	commission/Discount
$(100 - D\%)$	$: (100 + P\%)$	
$(100 - 23)$	$: (100 + 10)$	
77	110	
Divide by 11 and consider 70 and 100		
70	100	
P 100%	X 8	
7 → 8	→ 800	Advertisement
1 → 8		price

6) The marked price of an article is 50% above cost price. When marked price is increased by 20% and selling price is increased by 20%. The profit doubles. If original marked price is Rs. 300, then original selling price is:



7) The cost of manufacture of a tape recorder is Rs. 1500. The manufacturer fixes the marked price 20% above the cost of manufacture and allows a discount in such a way as to get a profit of 8%. The rate of discount is:



8) A publisher printed 2000 copies of a book at a cost of Rs. 70,000. He distributes 400 copies free as specimen copies. He gave 30% discount on marked price of each book which is Rs. 75. What is his gain or loss percent?

$$2000 \xrightarrow{CP} 70,000$$

↓
1600

75
72.5
30% Discount
52.5

14000

$$1600 \times 52.5 \rightarrow 84000$$

84000

$$\frac{20\%}{70,000} \times 100 = 20\%$$

gain

(P2)

$$2000 \rightarrow 70,000$$

$$20 \rightarrow 70$$

↓
140
140
700

4 16 $\begin{array}{|c|} \hline +20\% \\ \hline \end{array}$

$\frac{140}{700} \times 100 = 20\%$
gain

- Q) A got 30% concession on the label price of an article sold for Rs. 8750 with 25% profit on the price he bought. The label price was:



$$CP : MP$$

$$(100 - 30\% D) : (100 + 25\% P)$$

$$70 : 125$$

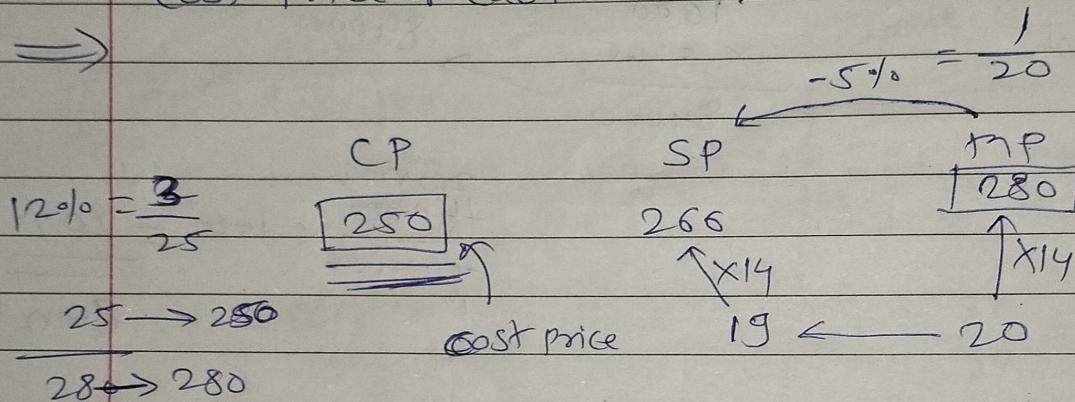
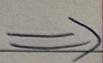
↓
17.5

125×100

87.5
 $\times 100$
8750

$= 12500$
marked / label
Price

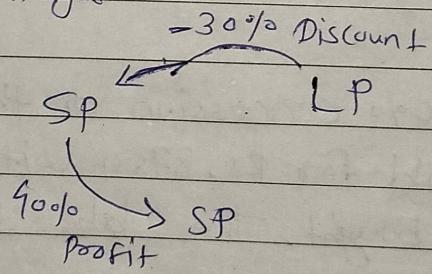
Q) A shopkeeper sold sarees at Rs. 266 each after giving 5% discount on labeled price. Had he not given the discount, he would have earned a profit of 12% on the cost price. What was the cost price of each saree?



Q) Dharmendra purchased a wrist watch with 30% discount on the labeled price. He sold it with 40% profit on the price he bought. What was his percent loss on the labeled price?



Successive Percentage



$$\begin{array}{r}
 \text{LP} \\
 \times 10 \\
 \times 5 \\
 \hline
 50
 \end{array}
 \quad
 \begin{array}{r}
 \text{SP} \\
 \times 7 \\
 \times 7 \\
 \hline
 49
 \end{array}$$

$30\% = \frac{3}{10}$
$40\% = \frac{2}{5}$

100 Loss 98

2%

12) A retailer purchased radiosets at the rate of Rs. 400 each from a wholesaler. He raised the price by 30% and then allowed a discount of 8% on each set. His profit will be:



$$\begin{array}{r}
 \text{CP} & \text{SP} \\
 10 & 13 \\
 \times & \times \\
 25 & 23 \\
 \hline
 250 & 299
 \end{array}$$

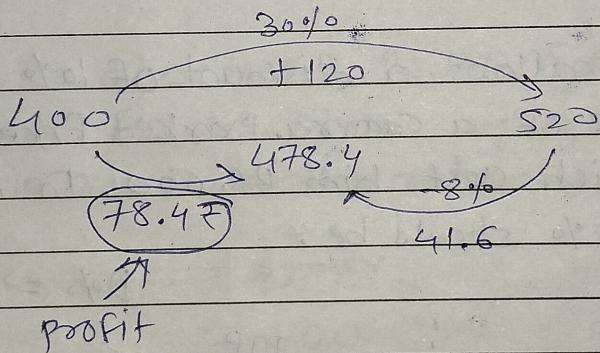
$$30\% = \frac{3}{10}$$

$$8\% = \frac{2}{25}$$

$$1000 \xrightarrow{19.6\%} 1196$$

$$400 \xrightarrow{19.6\%} 78.4 \text{ ₹} \xrightarrow{\quad} \text{Profit}$$

(12)



12) The difference between successive discounts of 40% followed by 30% and 45% followed by 20% on the marked price of an article is Rs. 12. The marked price of the article is:

⇒ USE $\frac{-A - B + AB}{100}$ Formula

$$\begin{array}{c|c}
 -40 - 30 + \frac{1200}{100} & = 45 - 20 + \frac{900}{100} \\
 + 70 + 12 & \qquad \qquad \qquad MP = 100\%
 \\ \hline
 (58\%) & = 65 + 9 \\
 & \qquad \qquad \qquad 100\% \times 6 \\
 & \qquad \qquad \qquad = (600) \times MP \\
 & \qquad \qquad \qquad 12 \text{ RS.}
 \end{array}$$

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- 14) A dealer buys an article listed at Rs. 100 and gets successive discounts of 10% , 20% on transportation. At what price should he sell the article to earn a profit of 15% ?

$$\rightarrow \text{successive discounts} : 10\% = \frac{1}{10}, 20\% = \frac{1}{5}$$

$$\text{Profit} : - 15\% = \frac{3}{20}$$

$$\begin{array}{r}
 10 & 9 \\
 \times 5 & \times 4 \\
 \hline
 20 & 23 \\
 \hline
 280 & 207 \\
 \end{array}$$

$$\begin{array}{c}
 \left(100\right) \downarrow \frac{2}{5} & \downarrow 40\% \\
 100 & \circled{82.8} \quad \parallel \\
 \end{array}$$

- 15) A shopkeeper allows a discount of 10% on the marked price of a camera. Marked Price of the camera, which cost him Rs. 600. To make a profit of 20% should be:

$$\Rightarrow D\% = 10\%, P\% = 20\%$$

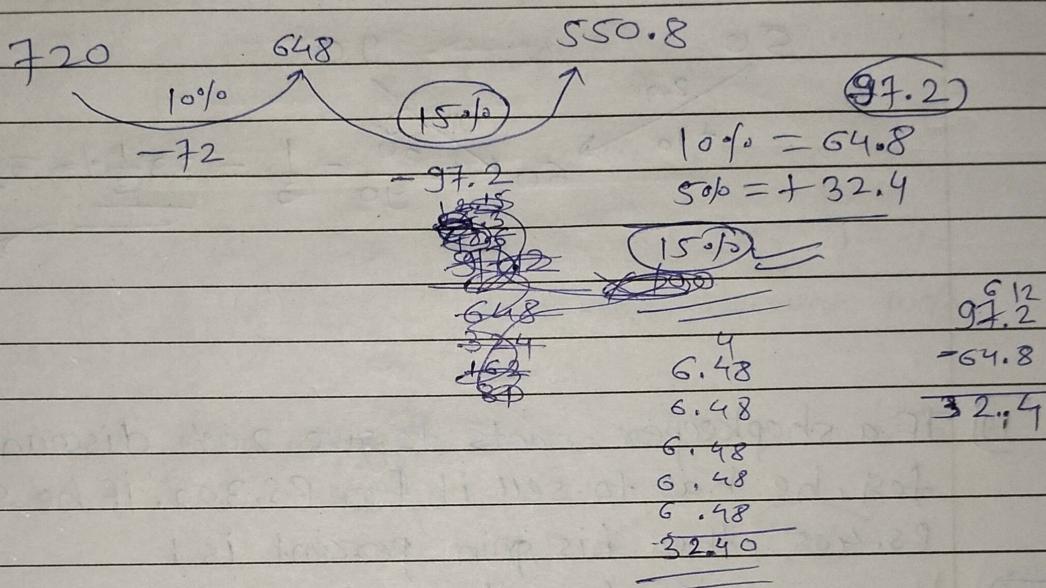
$$\begin{array}{l}
 CP : MP \\
 (100 - D\%) : (100 + P\%) \\
 (100 - 10) : (100 + 20) \\
 90 : 120 \\
 \text{Divide by } 30
 \end{array}$$

$$\begin{array}{r}
 3 : 4 \\
 \times 200 \\
 \hline
 600
 \end{array}$$

$\circled{800} \leftarrow \text{marked price}$

- 16) The marked price of a watch was Rs. 720. A man bought the same for Rs. 550.80 after getting two successive discounts. The first being 10%. The second discount rate is :

⇒



- 17) List price of a book is Rs. 100. A dealer sells three such books for Rs. 274.50 after allowing discount at a certain rate. Find the rate of discount.

⇒

$$\begin{aligned} 3 \text{ books} &= 100 \times 3 \\ &= 300 \\ &\quad 274.5 \\ &\quad \swarrow \\ &\quad 25.5 \rightarrow \frac{3}{(8.5\%)} \quad \text{Discount} \end{aligned}$$

④

(m2)

100

$\left.\right) (8.5\%)$

91.5

$$\frac{274.50}{3} = 91.5 \leftarrow \begin{array}{l} \text{one book} \\ \text{sell price.} \end{array}$$

18) If the cost price of an item is $\frac{5}{9}$ of its marked price and the profit is 20%, then the percentage of discount is:



$$\begin{array}{ccc}
 \text{CP} & & \text{MP} \\
 50 & & 90 \\
 \swarrow 20\% & & \downarrow \text{Diff} \\
 +10 & \rightarrow & 60 \\
 \end{array}$$

$$\frac{30}{90} = \frac{1}{3} = \underline{\underline{33\frac{1}{3}\%}} = 33.33\%$$

→ Discount Percentage

19) If a shopkeeper wants to give 20% discount on a toy, he has to sell it for Rs. 300. If he sells it at Rs. 405, then his gain percent is:



$$20\% = \frac{1}{5}$$

$$\begin{array}{ccccc}
 4 & \leftarrow & 5 & & \\
 \downarrow \times 75 & & \downarrow \times 75 & & \\
 300 & & [375] & \xrightarrow{+30} & 405 \\
 & & & & \\
 & & & \frac{30}{375} \times \frac{4}{100} & = \underline{\underline{8\%}} \\
 & & & \downarrow & \\
 & & & & \text{Gain percent}
 \end{array}$$

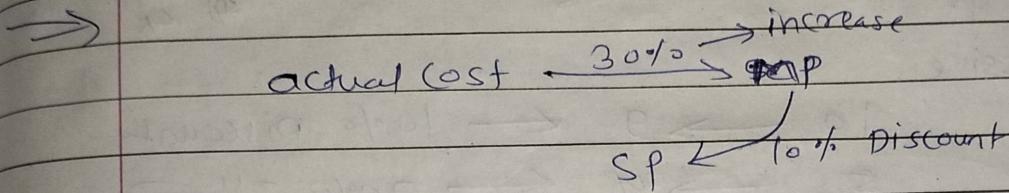
102)

$$300 \rightarrow 80\%$$

$$\begin{array}{ccc}
 405 & \rightarrow & \frac{8}{10} \times \frac{8+27}{405} \\
 & & \frac{30}{5} \times \frac{37}{405} \\
 & & \Rightarrow \underline{\underline{108\%}}
 \end{array}$$

81% Profit

20) A shopkeeper fixes the price of an article at 30% higher than its actual cost. If he sells it at 10% discount on marked price, the profit is:



Suppose price of article 10

$$\begin{array}{ccccccc}
 10 & \longrightarrow & 13 & \leftarrow & \text{increase } 30\%
 \\
 \times 10 & \longrightarrow & \times 9 & \leftarrow & \text{discount } 10\%
 \\
 \hline
 100 & & 117 & & \\
 & \nearrow & & & \\
 & & 17\% & & \\
 & & \nearrow & & \\
 & & \text{Profit is } 17\% & &
 \end{array}$$

21) Satyaveer purchased a bag with 20 percent discount on the labeled price. He sold it with 40 percent profit on the price he bought. The percentage of profit on the labeled price is:

$$\Rightarrow 20\% = \frac{1}{5}, 40\% = \frac{2}{5}$$

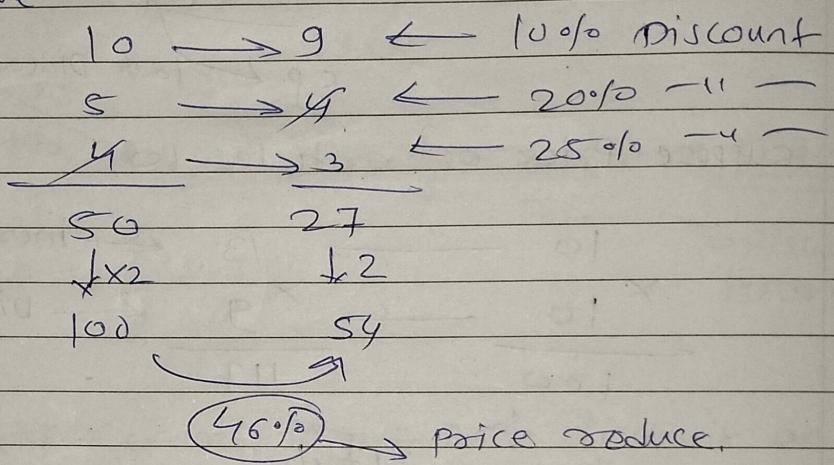
successive

$$\begin{array}{ccccccc}
 5 & \longrightarrow & 4 & \leftarrow & 20\% \text{ discount} \\
 \times 5 & \longrightarrow & \times 7 & \leftarrow & 40\% \text{ profit.} \\
 \hline
 25 & & 28 & & \\
 \downarrow \times 4 & & \downarrow \times 4 & & \\
 100 & & 112 & & \\
 & \nearrow & & & \\
 & & 12\% & & \\
 & & \nearrow & & \\
 & & \text{Profit} & &
 \end{array}$$

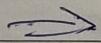
(22) successive discount of 10% , 20% and 25% on the price of an article will reduce the price by:

$$\Rightarrow 10\% = \frac{1}{10}, 20\% = \frac{1}{5}, 25\% = \frac{1}{4}$$

successive



(23) How much Percentage above the cost Price should a shopkeeper mark his good so that after allowing a discount of 10% . he should gain 26% ?



$$CP : MP$$

$$(100 - D\%) : (100 + P\%)$$

$$P = 26\%$$

$$D = 10\%$$

$$(100 - 10\%) : (100 + 26\%)$$

$$90 : 126$$

$$\frac{36}{90} \times 100$$

$$= 40\%$$

\Rightarrow above the cost price.

* 24) A tradesman gives 4% discount on the marked price and gives one article free for buying every 15 articles and thus gains 35%. The marked price is approx. how much percent above the CP?



$$CP : MP$$

$$(100 - 4\%) : (100 + 35\%)$$

$$\frac{96}{\text{article}} : \frac{135}{15 \leftarrow \text{articles}}$$

$$\frac{96}{16} : \frac{135}{15}$$

$$6 : 9$$

$$\frac{3}{6} \times 100 = 50\% \quad \text{above the CP}$$

* 25) When a producer allows 36% concession on the retail price of his product, he earns a profit of 8.8%. What would be his Profit Percent if the commission is reduced by 24%?



$$CP : MP$$

$$(100 - D\%) : (100 + P\%)$$

$$(100 - 36) : (100 + 8.8)$$

$$64 : 108.8$$

$$\frac{64}{\text{divide by } 16} : 108.8$$

$$4 : 68$$

$$\text{divide by } 4$$

$$10 : 17$$

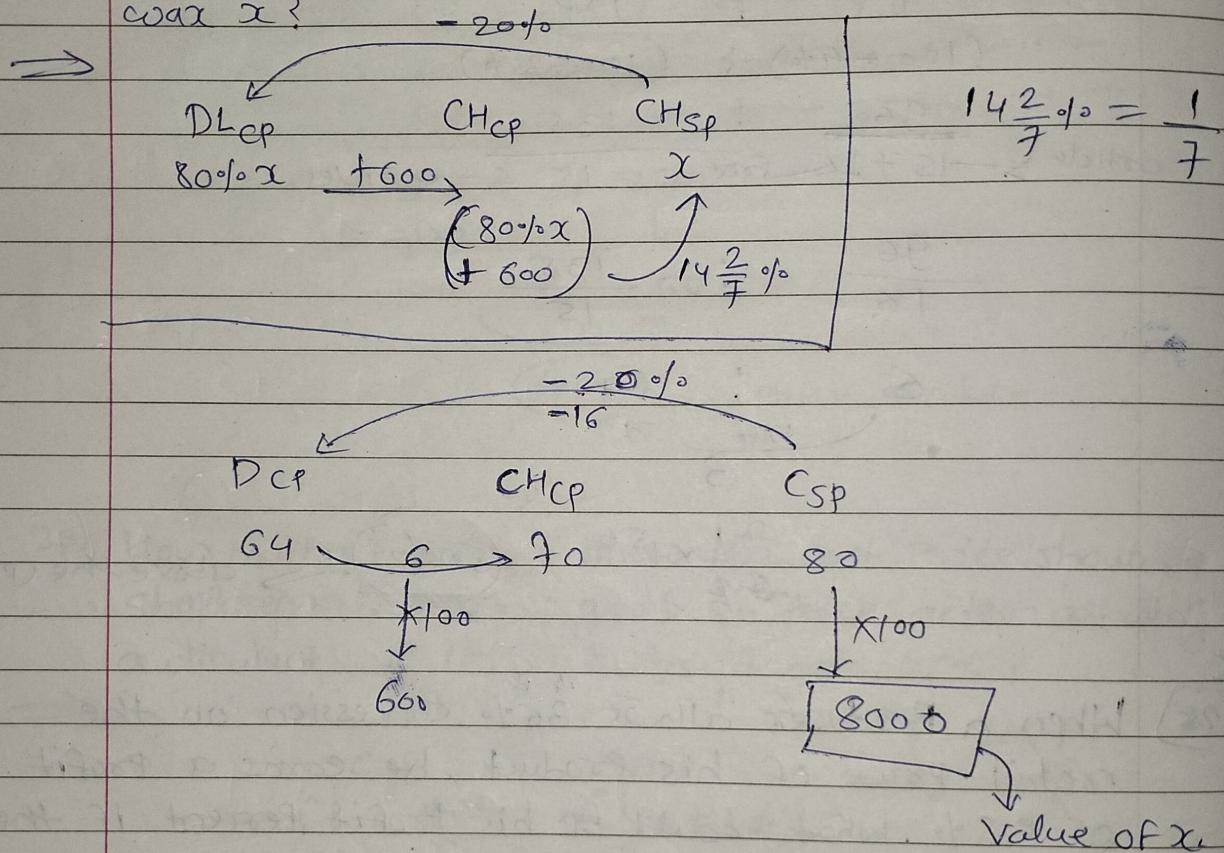
$$\text{Profit} \leftarrow 19.6\% \quad \begin{array}{l} -12\% \\ -20.4 \\ \hline 149.6 \end{array}$$

Imp

$$\text{by } 24\% = \cancel{-24\%}$$

$$\text{to } 24\% = 24\%$$

- 26) A TV set is being sold for Rs. x in Chandigarh. A dealer went to Delhi and bought the TV at 20% discount (from the price of Chandigarh). He spent Rs. 600 on transport. Thus he sold the set in Chandigarh for Rs. x making $14\frac{2}{7}\%$ profit. what was x ?



- 27) A shopkeeper sold an article offering discount of 5% and earn a profit of 23.5%. what would have been the percentage of profit earned if no discount has been offered?

The equation diagram shows the following relationships:

$$\begin{array}{l} \text{CP} \quad \text{MP} \\ (100 - D\%) : (100 + P\%) \\ (100 - 5) : (100 + 23.5) \\ 95 : 123.5 \\ 28.5 \leftarrow 30\% \end{array}$$

On the right, the profit calculation is shown as:

$$\begin{array}{l} 9.5 \rightarrow 10\% \\ \times 3 \\ 28.5 \rightarrow 30\% \\ 30\% \text{ Profit} \end{array}$$

* 28) A white goods dealer pays 10% custom duty on an i-Phone that costs Rs. 25000 in UK. For how much should be mark it, if he desires to make a profit of 20% after giving a discount of 25% to the buyer?

UK	Ind	CP	Discount %	MP	Profit %
25000	$\xrightarrow[2500]{10\%}$ 27500	$(100 - 25\%)$:	$(100 + 20\%)$	
		75	:	120	
		75 → 27500			
		3 → 1100			
	$\times 40$	$\times 40$			
	120	44000	← marked price		