Profit & Loss - 02

Md. Labu Miah

Instructor, P2A

Q20: A man buys an article for 10% less than its value and sells it for 10% more than its value. His gain or loss percentage is – [Janata Bank (RC)-21]

Let, marked price TK. 100

CP at 10% less than its value is TK. 90

SP at 10% more - - - - - - TK 110

Gain = 110 − 90 = TK. 20

$$\text{Gain \%} = \frac{20}{90} \times 100\% = 22.22\%$$

Q21: In a store, pens are sold for 25% less than the tag price. If a pen costs Tk. 48, what will be the tag price of the pen to make a 25% profit on its cost?

[BAPEX-23]

Here, CP Tk. 48 ≙ 100%

At 25% profit the SP would be = 125% of 48

$= \frac{125}{100} \times 48 = 60$ Tk.

Let, the tag price 100%

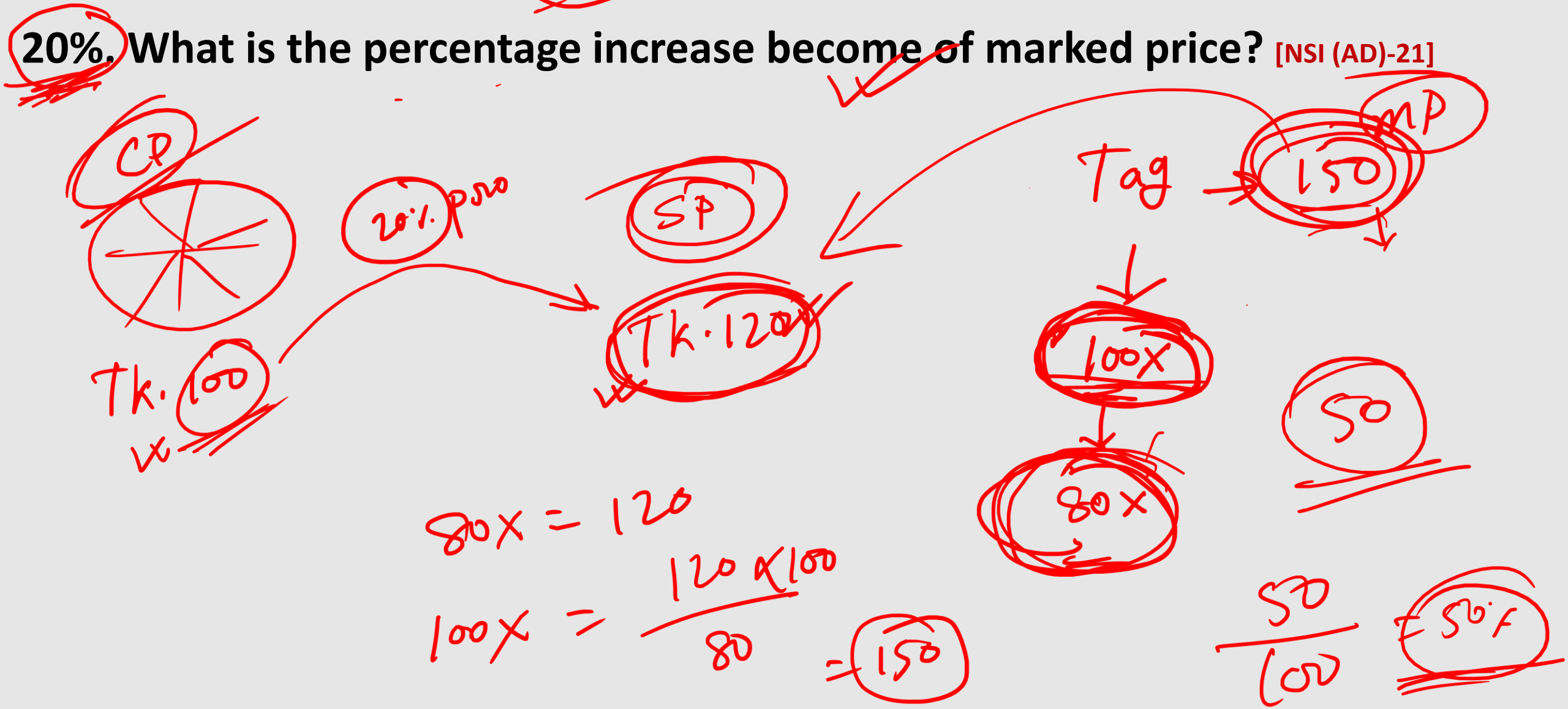
Atq 100% − 25% = 75% of tag price = 60

1% = $\frac{60}{75}$

100% = $\frac{60}{75} \times 100 = 80$


Tag
100 x
SP
60
75%
60
75%
SP
75%
60
25%
25%

Q22: A restaurant makes 20% profit after selling a set menu of a discount of 20%. What is the percentage increase become of marked price? [NSI (AD)-21]



Let, The CP be Tk. 100

At, 20% profit the SP Tk. 120

Let, MP be Tk. 100x

x	80x

ATQ, $80x = 120$

$$100x = \frac{120}{80} \times 100 = 150$$

So, marked price increased $= 150 - 100 =$ 50%

Q23: By what percentage above the cost price, a fan should be sold if a shopkeeper wants to make a profit of Tk. 500 and the marked price of the article is Tk. 6000 which is 50% above the cost price? [Comb (OG)-19]

fan

CP

Let, The cp of the fan Tk. $100x$

4500

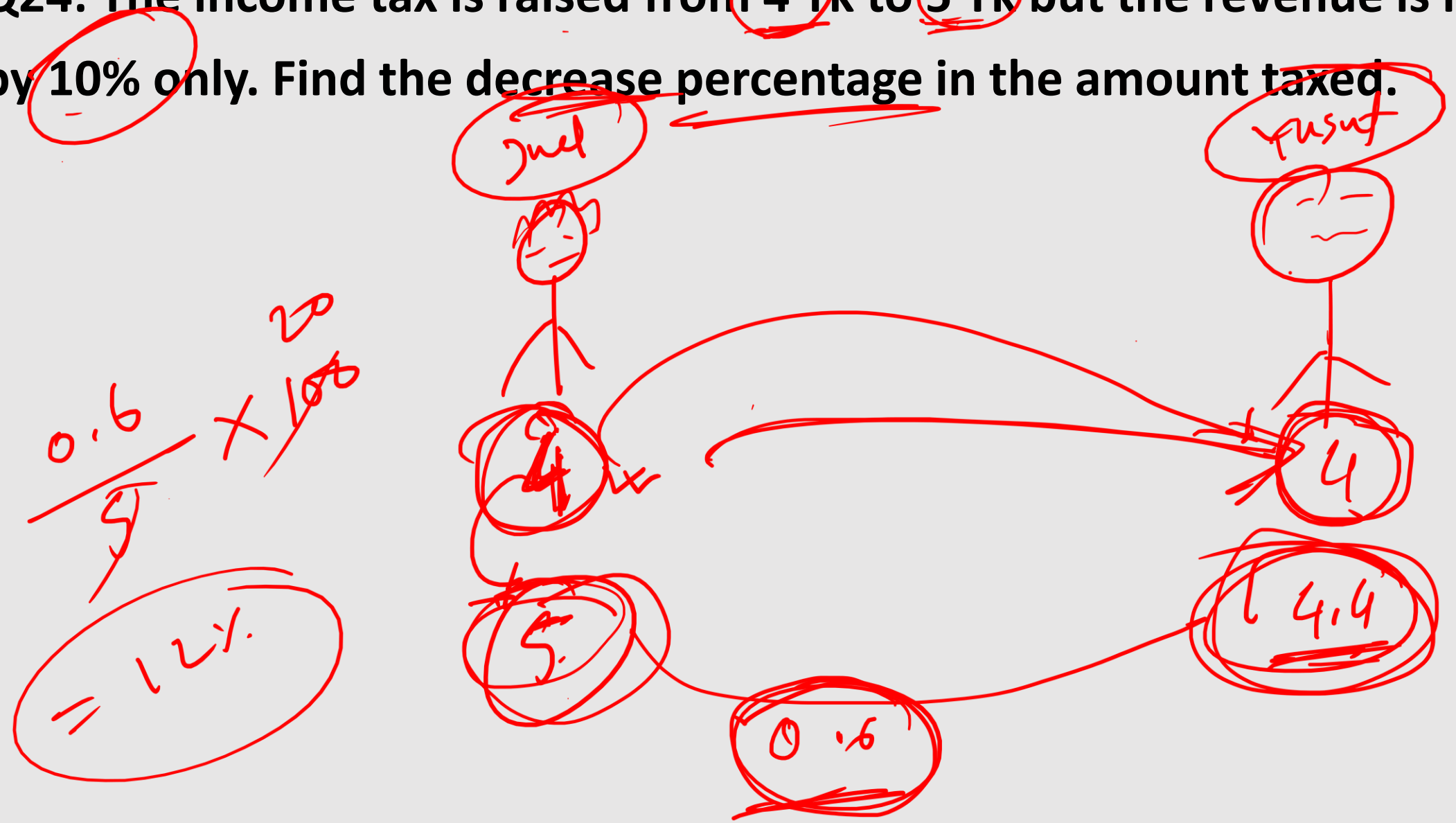
ATQ, $150x = 6000$

$$x = \frac{6000}{150}$$

$$100x = \frac{6000}{150} \times 100 = 4000$$

$$\text{profit \%} = \frac{500}{4000} \times 100 = 12.5\%$$

Q24: The income tax is raised from 4 Tk to 5 Tk but the revenue is increased by 10% only. Find the decrease percentage in the amount taxed.



Q24: The income tax is raised from 4 Tk to 5 Tk but the revenue is increased by 10% only. Find the decrease percentage in the amount taxed.

Previous Revenue → Tk. 4

Present Revenue → 110% of 4 = $\frac{110}{100} \times 4 = 4.4$

Revenue Decreased = $5 - 4.4 = 0.6$

Revenue Decreased percent = $\frac{0.6}{5} \times 100$

$= 12\%$

Q25: Two chairs have been sold, each for Tk. 3600. On one 20% profit, has been earned and on the other 20% loss has been incurred, what is the total profit or loss? [IFIC (TSO)-18]

Total sell price = 3600 × 2 = 7200

3600 3600

CP of 1st chair = $\frac{3600}{120} \times 100$

= 3000

Loss = 7500 − 7200

= Tk. 300

CP of 2nd chair = $\frac{3600}{80} \times 100 = 4500$

Total CP = 3000 + 4500 = 7500

4% Loss

SP = 3600

profit 20%.

96% = 288

4% = 300

120% of CP = 3600

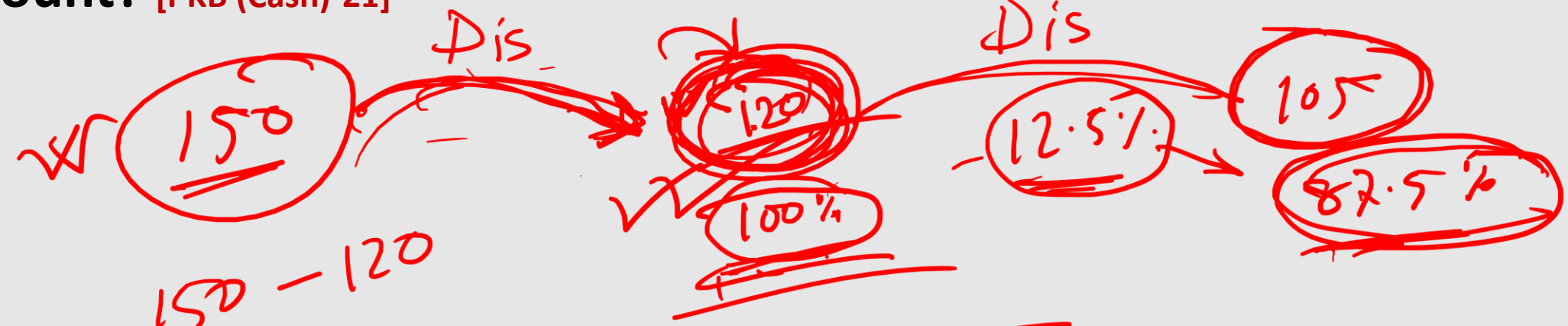
100% of CP = $\frac{3600}{120} \times 100$

$100 \times \frac{120}{100} \times \frac{80}{100} = 96$

= 3500

4%

Q26: After getting two successive discounts, a shirt with a list price of Tk. 150 is available at Tk. 105. If the second discount is 12.5%. Find the first discount? [PKB (Cash)-21]



$Dis = 150 - 120$

$= 30$

$87.5\% = 105$

$1\% = \frac{105}{87.5}$

$100\% = \frac{105 \times 100}{87.5} = 120$

$\frac{30}{150} \times 100$

20%

Q26: After getting two successive discounts, a shirt with a list price of Tk. 150 is available at Tk. 105. If the second discount is 12.5%. Find the first discount? [PKB (Cash)-21]

Let, The CP after 1st discount = $100x$

ATQ, 82.5% of $100x = 82.5x$

$\therefore 82.5x = 105$

$x = \frac{105}{82.5}$

$100x = \frac{105 \times 100}{82.5} = 120$

1st Discount = 150 − 120 = 30

Discount % = $\frac{30}{150} \times 100$

= 20%

Q27: If the manufacturer gains 10%, the wholesale dealer 15% and the retailer 25%, then find the cost of production of a table the retail price of which is Tk. 1265?

Let, The cost of Production tk x

Ans. $x \times \frac{110}{100} \times \frac{115}{100} \times \frac{125}{100} = 1265$

$x = 1265 \times \frac{100}{110} \times \frac{100}{115} \times \frac{100}{125}$

$= 800$

Q28: A sold a watch to B at a gain of 20% and B sold it to C at a loss of 10%. If C bought the watch for Tk. 216, at what price did A purchase it? [Comb Bank (SO)-18]

x

$A \to B \quad x \times \frac{120}{100} \times \frac{90}{100} = 216$

$x = 216 \times \frac{100}{120} \times \frac{100}{90} = \boxed{200}$

Q29: A and B invest in a business in the ratio 3 : 2. If 5% of the total profit goes to charity and A's share is Tk. 855. The total profit is- [Comb Bank (Cash) 19, PKB (Cash) 19]

Let, The total profit = 100%

After paying charity A's share = $\frac{19}{95}$% of $\frac{3}{5}$ = 57%

Ato, 57% of total profit = 855

100% - - - = $\frac{855}{57} \times 100$

= 1500

Q29: A and B invest in a business in the ratio 3 : 2. If 5% of the total profit goes to charity and A's share is Tk. 855. The total profit is- [Comb Bank (Cash) 19, PKB (Cash) 19]

$\rightarrow 100x$

5%

A' $\rightarrow$ 95% of $\frac{3}{5}$ = 57%

B = 95 − 57 = 38%

A $\rightarrow$ 57% of 100x = 57x

57x = 855

100x = $\frac{855}{57} \times 100$ = 1500

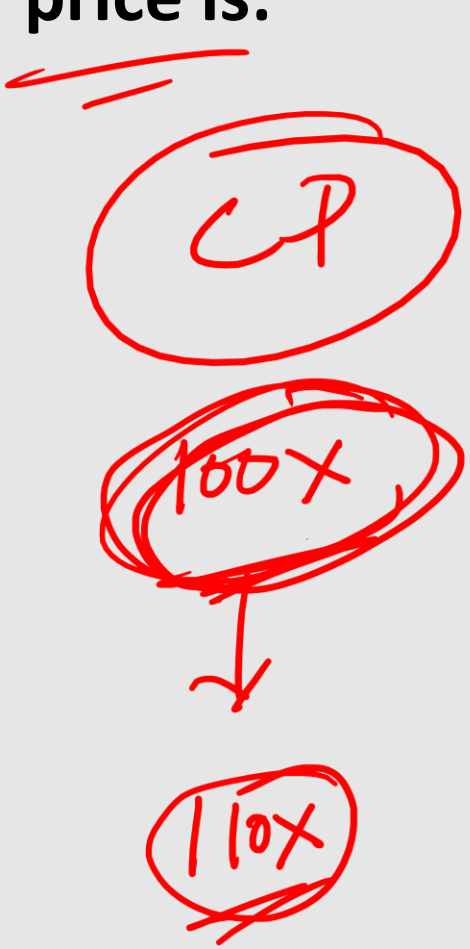
57% = 855

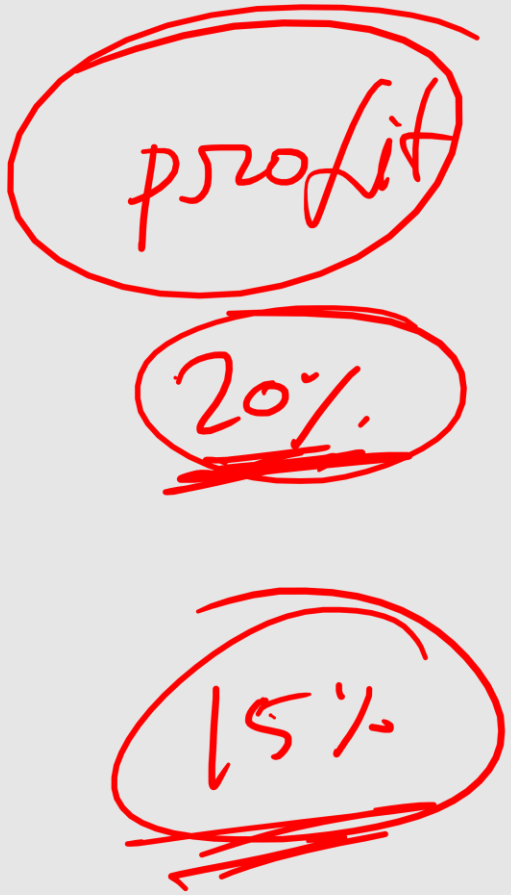
1% = $\frac{855}{57}$

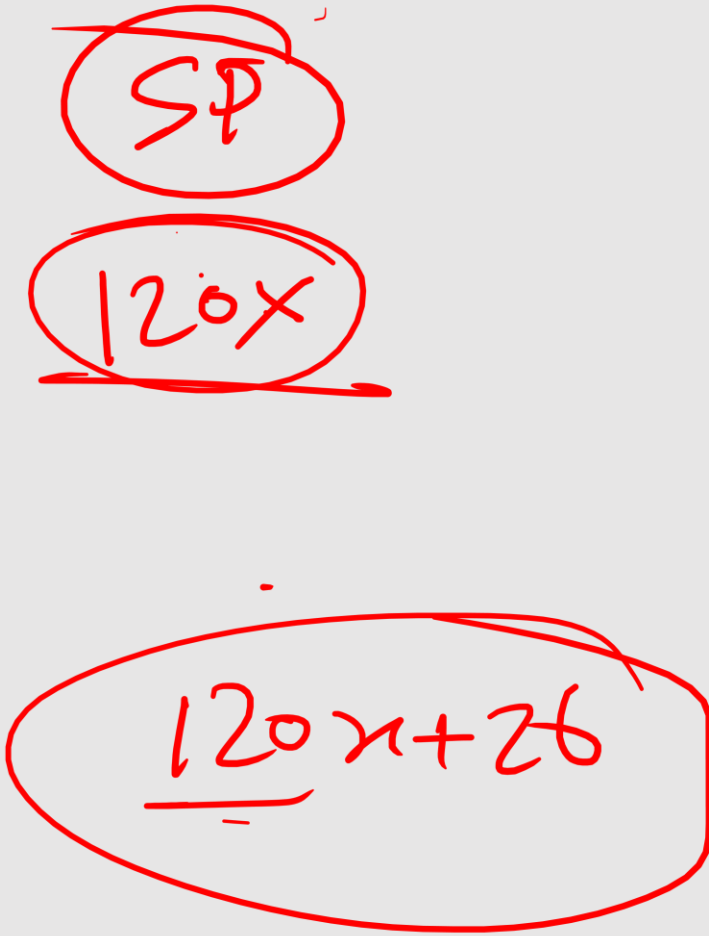
38% = $\frac{855}{57} \times 38$ = 570

$1500 \times \frac{38}{100}$ = 570

Q30: A product is sold at a profit of 20%. If the cost price is increased by 10% and sale price by Tk. 26, then the percentage of profit reduce by 5%, cost price is:







Q30: A product is sold at a profit of 20%. If the cost price is increased by 10% and sale price by Tk. 26, then the percentage of profit reduce by 5%, cost price is:

Let, initial CP = 100x

At 20% profit, " SP = 120x

After 10% increased The CP = 110x

After Tk. 26 " The SP = 120x + 26

profit reduced by 5%.

So. new profit As per new CP = 15% of 110x

$= \frac{165x}{10}$

ATQ.

$$120n + 26 - 110n = \frac{165n}{10}$$

$$\Rightarrow \quad 100x = 400$$

Thank You