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10) A man sold a bicycle at 5% profit. If the cost had been 30% less and the selling price Rs. 63 less he would have made a profit of 30%. What is the cost price of the bicycle?

Ans -> Let C.P of the bicycle = Rs. 100
when profit = 5%

$$S.P = Rs. (100 + 5) = Rs. 105$$

$$C.P = \left[100 - \frac{30}{100} \times 100 \right]$$

$$= \text{RS. } (100 - 30) = \text{RS. } 70$$

$$\text{Profit} = 30\%$$

$$S.P = \frac{(100 + \text{profit})}{100} \times C.P$$

$$= \frac{(100 + 30)}{100} \times \text{RS. } 70 = \frac{130}{100} \times \text{RS. } 70$$

$$= \text{RS. } \frac{130 \times 70}{100} = \text{RS. } 91$$

Difference of two selling prices

$$= \text{RS. } 105 - \text{RS. } 91 = \text{RS. } 14$$

If difference is RS. 14 then C.P. of the bicycle = RS. 100

$$\text{Rs. } 14 = \frac{\text{RS. } 100}{14}$$

$$\text{RS. } 63 = \frac{\text{RS. } 100}{14} \times 63$$

$$= \frac{\text{RS. } 100 \times 63}{14} = \text{RS. } 50 \times 9 = \text{RS. } 450$$

11. Renu sold an article at a loss of 8 percent. Had she bought it at 10% less and sold for Rs. 36 more, she would have gained 20%. Find the cost price of the article.

Ans. → Let C.P. of the article = RS. 100

when loss = 8%

$$S.P = \text{RS. } (100 - 8) = \text{RS. } 92$$

$$C.P = \text{RS. } \left[100 - \frac{10}{100} \times 100 \right]$$

$$= \text{RS. } (100 - 10) = \text{RS. } 90$$

Profit = 20%

$$S.P = \frac{100 + 20}{100} \times C.P.$$

$$= \frac{120}{100} \times \text{RS. } 90 = \text{RS. } 12 \times 9 = \text{RS. } 108$$

Difference of two selling prices

$$= \text{RS. } 108 - \text{RS. } 92 = \text{RS. } 16$$

If the difference of two selling prices is RS. 16

then C.P. = RS. 100

$$\text{"Re. } 1 \text{" " " " = RS. } \frac{100}{16}$$

$$\text{" " RS. } 36 \text{" " " = RS. } \frac{100 \times 36}{16}$$

$$= \frac{\text{RS. } 100 \times 36}{16} = \text{RS. } 25 \times 9 = \text{RS. } 225$$