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Subject: Mathematics

Teacher: Deepti

Topic: Chapter-7: Profit and Loss.

The following formulae will be asked to learn:

Profit: The selling price is more than that of cost price. ($S.P > C.P$)**Loss**: The cost price is more than that of selling price. ($C.P > S.P$)

$$\text{Profit} = S.P - C.P$$

$$\text{Loss} = C.P - S.P$$

$$\text{Profit \%} = \frac{P}{C.P} \times 100\%$$

$$\text{Loss \%} = \frac{L}{C.P} \times 100\%$$

$$S.P = \left(\frac{100 + P\%}{100} \right) \times C.P$$

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

$$S.P = \left(\frac{100 - L\%}{100} \right) \times C.P$$

$$C.P = \frac{100}{(100 - L\%)} \times S.P$$

Marked price: The printed price on the article by the shopkeeper is known as marked price (M.P)**Discount**: Rebate on the item is also known as discount. It is always calculated on marked price of the article

$$\therefore \text{Discount} = M.P - S.P$$

$$D\% = \frac{\text{Discount}}{M.P} \times 100\%$$

$$S.P = \left(1 - \frac{d}{100} \right) \times M.P$$

$$\text{Successive discount} = \left(1 - \frac{d_1}{100} \right) \left(1 - \frac{d_2}{100} \right) \times M.P$$

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Teacher: D. aplu

Sol'n-11 C.P of a land = ₹ 384000
Net S.P with Profit 10%.

$$S.P = \left(\frac{100 + P\%}{100} \right) \times C.P = \frac{110}{100} \times 384000$$

$$= ₹ 422400$$

for two-fifths of it at a loss of 6%.

$$C.P = \frac{2}{5} \times 384000 = ₹ 153600$$

$$S.P = \frac{100 - 6\%}{100} \times 153600 = \frac{94}{100} \times 153600$$

$$= ₹ 144384$$

$$f.P = ₹ 384000 - ₹ 153600 = ₹ 230400$$

$$S.P = ₹ 422400 - ₹ 144384 = ₹ 278016$$

$$\text{Profit} = S.P - C.P$$

$$= ₹ 278016 - ₹ 230400$$

$$P\% = \frac{47616}{230400} \times 100\% = 20\frac{2}{3}\%$$

Sol'n 13. S.P = ₹ 2142, P% = 5%

New profit = 10%

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

$$= \frac{20 \times 100}{105} \times 2142 = ₹ 2040$$

$$\text{New S.P} = \frac{100 + P\%}{100} \times C.P$$

$$= \frac{110}{100} \times 2040$$

$$= ₹ 2244$$

So, he should sold it for ₹ 2244

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Teacher:

Soln 1 M.P of a refrigerator = ₹ 16450

Discount = 16%

$$\begin{aligned} S.P &= \left(1 - \frac{d}{100}\right) \times M.P = \left(1 - \frac{16}{100}\right) \times 16450 \\ &= \left(\frac{25-4}{25}\right) \times 16450 \\ &= \frac{21}{25} \times 16450 \\ &= ₹ 13818 \end{aligned}$$

Soln 2 M.P = ₹ 850, S.P = ₹ 731

Discount = M.P - S.P

$$= ₹ 850 - ₹ 731 = ₹ 119$$

$$\text{Discount \%} = \frac{d}{M.P} \times 100\% = \frac{119}{850} \times 100\% = 14\%$$

Soln 3 S.P = ₹ 345, Discount = ₹ 30

$$M.P = ₹ 345 + ₹ 30 = ₹ 375$$

$$d\% = \frac{D}{M.P} \times 100\% = \frac{30}{375} \times 100\% = 8\%$$

Soln 4 S.P of a machine = ₹ 7660, D = 12%, P% = 10%

$$S.P = \left(\frac{100 + P\%}{100}\right) \times C.P = \frac{110}{100} \times 7660 = ₹ 8426$$

let the M.P be x

$$S.P = \left(1 - \frac{12}{100}\right) \times x = \frac{88x}{100}$$

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Teacher: Dapli

$$\frac{88x}{100} = 8426$$

$$x = \frac{8426 \times 100}{88} = ₹ 9575$$

solⁿ 13) let the single discount be $d\%$.

$$S.P = \left(1 - \frac{d}{100}\right) \times x \quad (\text{let M.P} = x)$$

$$S.P = \left(1 - \frac{d_1}{100}\right) \left(1 - \frac{d_2}{100}\right) \times x = \left(1 - \frac{40}{100}\right) \left(1 - \frac{5}{100}\right) \times x$$

$$\Rightarrow \left(1 - \frac{d}{100}\right) \times x = \left(\frac{60}{100}\right) \times \left(\frac{95}{100}\right) \times x$$

$$\frac{100 - d}{100} = \frac{3}{5} \times \frac{19}{20}$$

$$100 - d = 57$$

$$\Rightarrow d = 100 - 57$$

$$= 43$$

$$\text{So, } d\% = 43\%$$

————— x ————— x —————