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(Affiliated to CBSE up to +2 Level)

CLASS: VIII

SUB.: MATHS (NCERT BASED)

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The diffⁿ between the S.I and C.I on a certain

sum of money for 2 years at 12% per annum

is then show that $C.I - S.I = P \left(\frac{r}{100} \right)^2$

Let the sum be P , rate $r\%$ and time 2 years

$$\begin{aligned} S.I &= \frac{P \times R \times T}{100} \\ &= \frac{P \times 12 \times 2}{100 \times 100} = \frac{P \times 24}{10000} \end{aligned}$$

$$\begin{aligned} C.I &= P \left\{ \left(1 + \frac{r}{100} \right)^n - 1 \right\} \\ &= P \left\{ \left(1 + \frac{12}{100} \right)^2 - 1 \right\} \\ &= P \left\{ \left(\frac{100+12}{100} \right)^2 - 1 \right\} \\ &= P \left\{ \frac{10000 + 200 \times 12 + 12^2 - 10000}{10000} \right\} \\ &= P \left\{ \frac{12^2 + 200 \times 12}{10000} \right\} \end{aligned}$$

$$\begin{aligned}
 \text{C.I.} - \text{S.I.} &= P \left\{ \frac{r^2 + 200r}{10000} - \frac{Pr}{50} \right\} \\
 &= P \left\{ \frac{r^2 + 200r - 200r}{10000} \right\} \\
 &= P \left(\frac{r^2}{10000} \right)
 \end{aligned}$$

$$\text{C.I.} - \text{S.I.} = P \left(\frac{r}{100} \right)^2$$

Q. The diffⁿ between S.I and C.I on a certain sum of money for 2 years at 4% per annum is 20 find the sum.

Given. C.I - S.I = 20. $r = 4\%$. $t = 2$ years.

We know that

$$\text{C.I.} - \text{S.I.} = P \left(\frac{r}{100} \right)^2$$

$$\Rightarrow 20 = P \left(\frac{4}{100} \right)^2$$

$$\Rightarrow 20 = P \times \left(\frac{1}{25} \right)^2$$

$$\Rightarrow 20 = P \times \frac{1}{625}$$

$$\therefore P = ₹ 12500 \quad \underline{\underline{\text{Ans}}}$$

$$\text{Sum} = ₹ 12500/-$$

Q. Find the diffⁿ between C.I and S.I of principal 8000/- rate 5% and time 2 years.