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1 Principal = 30,000/-
C.I. = 4347/-
Rate of interest = 7%.

$$\begin{aligned} \text{Amount} &= 5000 \left(1 + \frac{2}{100}\right) \left(1 + \frac{2}{100}\right) \left(1 + \frac{2}{100}\right) \\ &= 5000 \times \frac{102}{100} \times \frac{102}{100} \times \frac{102}{100} \\ &= 5306.404 \end{aligned}$$

Amount = Principal + C.I.
Amount = 30,000 + 4347 = 34,347/-

Then C.I. = 5306.404 - 5000 = 306.404
difference between C.I. = 2.04.

Let the times is T years then,

$$\begin{aligned} \Rightarrow 34,347 &= 30,000 \left(1 + \frac{7}{100}\right)^T \\ \Rightarrow 34,347 &= 30,000 \left(\frac{107}{100}\right)^T \\ \Rightarrow \left(\frac{107}{100}\right)^T &= \frac{34,347}{30,000} \\ \Rightarrow \left(\frac{107}{100}\right)^T &= \frac{11449}{10,000} \\ \Rightarrow \left(\frac{107}{100}\right)^T &= \left(\frac{107}{100}\right)^2 \end{aligned}$$

4. Difference = 16/-
Rate of interest = 8%
Time = 2 years

∴ Time Period = 2 years.

$$\text{So, C.I.} - \text{S.I.} = \frac{PA^2}{100^2}$$

$$\begin{aligned} \Rightarrow 16 &= \frac{P \times 8^2}{100^2} \\ \Rightarrow P &= \frac{16 \times 10000}{64} = 2500/- \end{aligned}$$

2 Principal = 16,000/-

Rate of interest = 20% p.a. = $\frac{20}{4}$ = 5% per quarter

Time = 9 months or 3 quarters

5. Rate of interest = 5%

$$\begin{aligned} \text{Amount} &= P \left(1 + \frac{A}{100}\right)^n \\ \Rightarrow A &= 16000 \left(1 + \frac{5}{100}\right)^3 \\ &= 16000 \times \left(\frac{21}{20}\right)^3 \\ &= \frac{16000}{8000} \times \frac{21 \times 21 \times 21}{8000} = \frac{9260}{18000} \\ &= 18522 \end{aligned}$$

Time = 3 years.

S.I. = 12000

$$\text{So, } 12000 = \frac{P \times 5 \times 3}{100}$$

Therefore C.I. = 18522 - 16000 = 2522.

$$\Rightarrow P = \frac{12000 \times 100}{5 \times 3} = 80000$$

3 Principal = 5000/-

$$\begin{aligned} \text{Amount} &= 80,000 \times \left(1 + \frac{5}{100}\right)^3 \\ &= 92610/- \end{aligned}$$

Time period = $1\frac{1}{2}$ years
Interest = 4%

6. A = P + I

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$$\begin{aligned} \text{Amount} &= 5000 \left(1 + \frac{4}{100}\right) \left(1 + \frac{4}{100}\right) \\ &= 5000 \times \frac{104}{100} \times \frac{104}{100} \\ &= 5304/- \end{aligned}$$

Amount in 2 years = 7350/-

Amount in 3 years = 8575/-

Interest in 1 year = 8575 - 7350 = 1225

Then C.I. = 5304 - 5000 = 304/-

Interest in 2 years = 1225 × 2 = 2450

for C.I. com-
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ly.

Principal = 5000/-
Time period = $1\frac{1}{2}$ years
Interest = 4%

$$\text{So, } P + 2450 = 7350$$

$$\begin{aligned} P &= 7350 - 2450 \\ &= 4900/- \end{aligned}$$

$$\text{Rate of interest} = \frac{S.I \times 100}{P \times T}$$

$$= \frac{25}{14000} \times 100 = 25\%$$

7 Let the sum is x

$$S.I = \frac{P \times R \times T}{100}$$

$$C.I = P \left[\left(1 + \frac{R}{100} \right)^T - 1 \right] = P \left[\left(1 + \frac{25}{100} \right)^4 - 1 \right] = \frac{P \times R \times T}{100} = \frac{P \times 10 \times 2}{100} = 124.05$$

$$= P \left\{ \left[\left(\frac{21}{20} \right)^4 - 1 \right] - \frac{1}{5} \right\} = 124.05$$

$$= P \left\{ \left[\frac{21 \times 21 \times 21 \times 21 - 160000}{160000} \right] - \frac{1}{5} \right\} = 124.05$$

$$= P \left\{ \left[\frac{194481 - 160000}{160000} \right] - \frac{1}{5} \right\} = 124.05$$

$$= P \left\{ \frac{34481}{160000} - \frac{1}{5} \right\} = 124.05$$

$$= P \left\{ \frac{34481 - 32000}{160000} \right\} = 124.05$$

$$= \frac{P \times 2481}{160000} = 124.05$$

$$= P = \frac{124.05 \times 160000}{2481}$$

$$= P = \frac{124.05 \times 1600}{24.81}$$

$$= P = 1600 \times 5 = 8000 \text{ /-}$$

∴ Principal = 8000/-

8 Principal = P

Rate of interest = 10%

Time = 2 year

Difference between S.I. and S.I = 631 /-

$$= 631 = \frac{P \times 10^2}{100^2} = \frac{631 \times 10000}{100} = 63100 \text{ /-}$$

$$9 \text{ Principal} = 18000$$

$$\text{Time} = 2 \text{ year}$$

$$\text{Rate of interest} = R$$

$$\text{Difference between C.I. and S.I.} = 405$$

$$\text{So, } 405 \times \frac{18000 \times R^2}{100^2}$$

$$\Rightarrow \text{So } R^2 = \frac{45 \times 5}{405 \times 10000} \times 18000$$

$$\Rightarrow R^2 = 225$$

$$\Rightarrow R = 15$$

$$10 \text{ Principal} = 1000$$

$$\text{Amount} = 1331$$

$$\text{Rate percent} = 10\%$$

$$\text{Time} = T$$

$$\text{So, } 1000 \left(1 + \frac{10}{100}\right)^n = 1331$$

$$\Rightarrow 1000 \times \left(\frac{11}{10}\right)^n = 1331$$

$$\Rightarrow \left(\frac{11}{10}\right)^n = \frac{1331}{1000}$$

$$\Rightarrow \left(\frac{11}{10}\right)^n = \left(\frac{11}{10}\right)^3$$

$$\text{Time period} = 3 \text{ years.}$$