Home Work

1. ans- Let the sum be Rs. x.

Then $x\left[\left(1+\frac{10}{100}\right)^2-1\right] = 525$

$\Rightarrow x\left[\left(\frac{11}{10}\right)^2\right] = 525$

$\Rightarrow x\left[\frac{121-100}{100}\right] = 525$

$\Rightarrow x = \frac{525 \times 100}{21} = Rs\ 2500$

P = Rs 2500, R = 5% p.a, T = 4 years

S.I. = Rs $\left(\frac{2500 \times 5 \times 4}{100}\right)$ = Rs 500

2. ans- P = Rs 4000

T = 2 years

R = 10%

Compound interest = $p(1+r)^n - p$

$I = p\{(1+r)^n - 1\}$

$I = 4000(1+10)^2 - 1$

$I = 4000(1.21-1)$

$I = 840$

simple interest = $\frac{840}{2} = 420 = \frac{PRT}{100}$

$I = 420 = p \times 0.08 \times 3$

I = Rs 1750

3. ans- Given;

60% increase in amount in 6 years at SI

CI of Rs 12,000 after 3 years at same rate.

$SI = \frac{P \times R \times T}{100}$

and $A = SI + P$ ——— (2)

Where A = Amount

Let principal be Rs. P

$A = P + 60\%$ of P

$A = P + \frac{60}{100} P$

$A = \frac{8P}{5}$ ——— (1)

also from equation (2)

$A = SI + P$ (putting value of A from eq (1))

$\frac{8P}{5} = \frac{P \times R \times 6}{100} + P$

$\frac{8}{5} = \frac{6R}{100} + 1$

$\boxed{R = 10\%}$ ——— (3)

For; Compound interest

$A = P\left(1 + \frac{R}{100}\right)^n$

n = time period

$A = 12000\left(1 + \frac{10}{100}\right)^3$

$A = Rs\ 15972$ ——— (4)

Compound interest = Amount − principal

$= 15972 - 12000$

$CI = Rs\ 3972$

Ans - $S.I = \frac{P \times r \times T}{100} = \frac{15000 \times r \times 2}{100} = 300r$

$C.I = 15000 T \left[\left(1 + \frac{r}{100}\right)^2 - 1 \right]$.

$= 15000 \left[1 + \frac{r^2}{1000} + \frac{2r}{100} - 1 \right] = 1.5r^2 + 300r$

$C.I = S.I$

$C.I - S.I = 96$

$\Rightarrow 1.5r^2 + 300r - 300r = 96$

$\Rightarrow 1.5r^2 = 96$

$\Rightarrow r^2 = \frac{96}{1.5} = 64$

$r = 8 \Rightarrow$ rate $= 8\%$