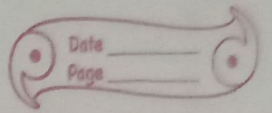


Home Work



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

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

$$\Rightarrow x \left[\left(\frac{11}{10}\right)^2 - 1 \right] = 525$$

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

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

$P = \text{Rs } 2500$, $R = 5\%$ p.a., $T = 4$ years

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

2. ans - $P = \text{Rs } 4000$

$T = 2$ years

$R = 10\%$

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

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

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

$$I = 4000 \left(1.21 - 1 \right)$$

$$I = 840$$

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

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

$$I = \text{Rs } 1750$$

3. ans - Given ;

60% increase in amount in 6 years

at SI

CI of Rs 12,000 after 3 years at

same rate.

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

$$\text{and } A = SI + P \quad \text{--- (2)}$$

where A = Amount

Let principal be Rs. P

$$A = P + 60\% \text{ of } P$$

$$A = P + \left(\frac{60}{100}\right) P$$

$$A = \frac{8P}{5} \quad \text{--- (1)}$$

also from equation (2)

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

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

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

$$\boxed{R = 10\%} \quad \text{--- (3)}$$

For: Compound interest

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

n = time period

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

$$A = \text{Rs } 15972 \quad \text{--- (4)}$$

compound interest = Amount - principal

$$= 15972 - 12000$$

$$CI = \text{Rs } 3972$$

$$Y.o.m.s - S.I = \frac{P \times r}{100} + T = \frac{15000 \times r \times 2}{100} = 300r$$

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

$$= 15000 \left[1 + \frac{r^2}{10000} + \frac{2r}{100} - 1 \right] = 1.5r^2 + 300r$$

$$C.I = S.I$$

$$C.I - S.I = 96$$

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

$$\Rightarrow 1.5r^2 = 96$$

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

$$r = 8 \Rightarrow \text{rate} = 8\%$$