SIMPLE INTEREST

Simple Interest S.I.

Amount (A)

Sum of Interest and the principal

A = P + S. I.

P = Rs. 7200
R = 18% P.A.
T = 3 years

$$S.I. = \frac{Rs.7200 \times 18 \times 3}{100}$$

= Rs. 3888

Amount = P + I
= Rs. 7200 + Rs. 3888
= Rs. 11088

If after certain years sum of money :
(A) Doubles ⇒ A= 2P ⇒ S.I. = 2P-P = P
(B) Triples ⇒ A = 3P ⇒ S.I. = 3P-P = 2P

eg : A sum of money doubles itself in 8 years what is the rate of interest.
Sol. Principal = P ; A = 2P
T = 8 years.
S.I. = 2P - P = P

$$R = \frac{P \times 100}{P \times 8} = 12.5\%$$

Principal (P)

Cash borrowed by you from the lander is called principal/ sum borrowed.

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

eg : S.I. = Rs. 450
Time = 3years
Rate = 5% P.A.

$$P = \frac{Rs.450 \times 100}{5 \times 3} = Rs.3000$$

Interest S.I.

Additional money paid by borrower to the lender for the money used

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

P = Rs. 2000
R% = 14% P.A.
T = 5 years

$$S.I. = \frac{Rs.\ 2000 \times 14 \times 15}{100}$$

= Rs. 1400

P = Rs. 3700

$$T = 2\frac{1}{2} \text{ years} = \frac{5}{2} \text{ years}$$

$$R = 5\frac{1}{2}\% \text{P.A.} = \frac{11}{2}\%$$

$$S.I. = \frac{Rs.3700}{100} \times \frac{11}{2} \times \frac{5}{2}$$

= Rs. 508.75

Rate (R) Percent

Sum paid for use of Rs. 100

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

S.I. = Rs. 280
P = Rs. 56000
T = 2 years

$$R\% = \frac{Rs.280 \times 100}{56000 \times 2} = \frac{1}{4}\%$$

Time (T)

Time for which money is barrowed (calculated in years)

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

If T is given in days

$$\text{then } T = \frac{\text{no. of days}}{365} \text{ years}$$

eg : P = Rs. 1200
R = 6% P. A.

$$T = 146 \text{ days} = \frac{146}{365} = \frac{2}{5} \text{ years}$$

$$S.I. = Rs.\frac{1200 \times 6}{100} \times \frac{2}{5}$$

= Rs. 28.80

If T is in months

$$\text{Then } T = \left(\frac{\text{no. of months}}{12}\right) \text{years}$$

eg : P = Rs 2400
R = 8% P.A.
T = 6 month = $\frac{6}{12}$ year

$$S.I. = \frac{Rs.2400 \times 8}{100} \times \frac{6}{12}$$

= Rs. 96

P = Rs. 2400
R% = 5% P. A.
S.I. = Rs. 240

$$Time = \frac{Rs.240 \times 100}{Rs.2400 \times 5}$$

= 2 years