

DATE: / /

7. simple Interest

$$A = 10000 + 900 = 10900$$
$$SI = \frac{P \times R \times T}{100}$$

$p = \text{Principal}$

$R = R_{\text{ref}}$

$T = \text{Time.}$

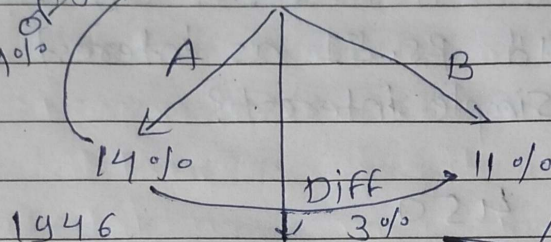
$$\begin{array}{ccccc}
 & P & & A & & A \\
 & \boxed{698} & & 815 & & 854 \\
 \swarrow & & \nearrow +117 & & \nearrow 39 & \\
 & & 398 & & 142 &
 \end{array}$$



Short cut method:-

14% of these value

13900



1446

Diff

192

1754

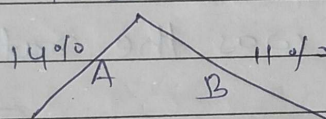
Diff

3%

8% $\xrightarrow{64}$ 192100% $\xrightarrow{\times 64}$ 6400

B scheme

13900



$$\frac{(13900 - x) \times 14 \times 2}{100} + \frac{x \times 11 \times 2}{100} = 3508$$

- 3) A sum fetched a total simple interest of Rs. 4016.25 at the rate of 9 P.C.P.A in 5 years. What is the sum?



$$9\% \times 5 \text{ yr} = 45\% \longrightarrow 4016.25$$

$$100\% \longrightarrow \frac{4016.25 \times 100}{45}$$

$$\longrightarrow \frac{401625}{45}$$

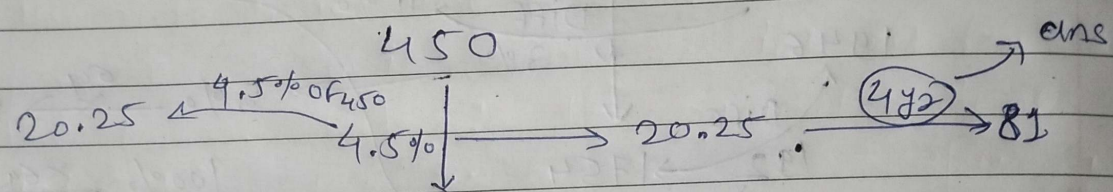
$$\Rightarrow \boxed{8925}$$

Sum

$$\begin{array}{r} 4.5 \\ \times 4.5 \\ \hline 225 \\ 800 \\ \hline 20.25 \end{array}$$

4) How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?

⇒



5) Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?

⇒

$$SI = \frac{PRT}{100} \quad \boxed{T=R}$$

$$432 = \frac{1200 \times R \times R}{100}$$

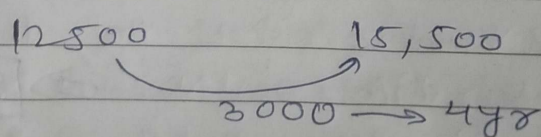
$$\frac{432}{12} = R^2$$

$$R^2 = 36$$

$$\boxed{R=6} \leftarrow \text{Rate of interest.}$$

6) A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest?

⇒

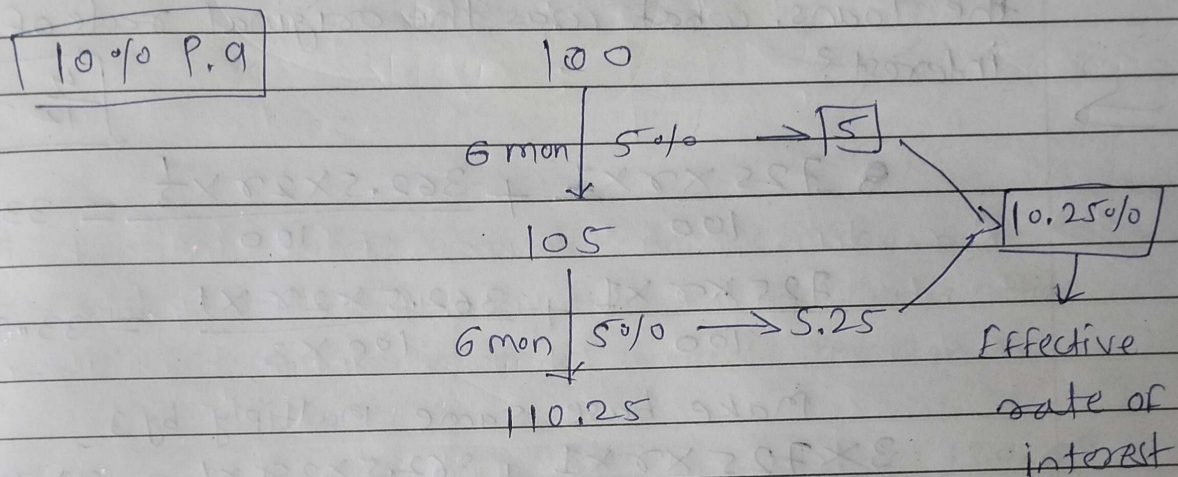


$$750 \times 4 = 3000$$

$$\frac{3000}{12500} \times 100 = 24\% \leftarrow \text{rate of interest.}$$

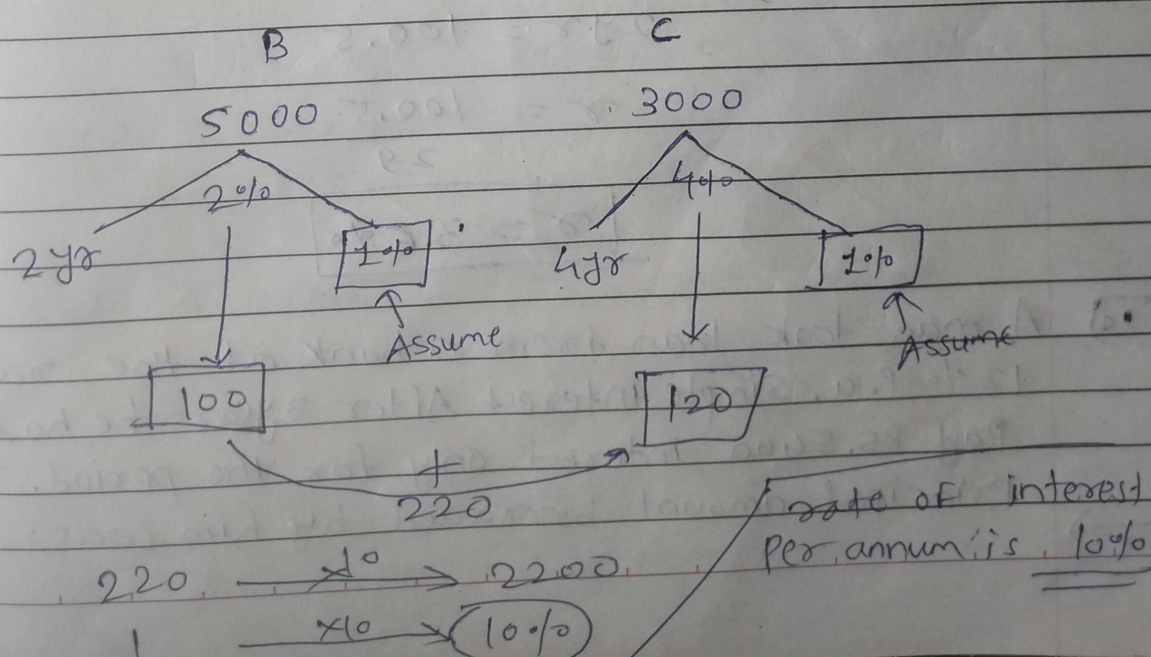
- 7) An automobile Financier claims to be lending money at simple interest, but he includes the interest every six months for calculating the principal. If he is charging an interest of 10% the effective rate of interest becomes.

⇒



- 8) A lent Rs. 5000 to B for 2 years and Rs. 3000 to C for 4 years on the simple interest at the same rate of interest and received Rs. 2200 in all from both of them as interest. The rate of interest per annum is:

⇒



- 9) A sum of Rs. 725 is lent in the beginning of a year at a certain rate of interest. After 8 months, a sum of Rs. 362.50 more is lent but at the rate twice the former. At the end of the year, Rs. 33.50 is earned as interest from both the loans. What was the original rate of interest?

$$\left[\frac{4}{12} - \frac{1}{3} \right]$$

$$\frac{725 \times r \times 1}{100} + \frac{362.5 \times 2r \times \frac{1}{3}}{100} = 33.5$$

$$\frac{725 \times r \times 1}{100} + \frac{362.5 \times 2r \times 1}{100 \times 3} = 33.5$$

Make base same multiply by 3

$$\frac{3 \times 725 \times r \times 1}{100 \times 3} + \frac{362.5 \times 2r \times 1}{100 \times 3} = 33.5$$

$$\frac{2175r + 725r}{300} = 33.5$$

$$\frac{2900r}{300} = 33.5$$

$$29r = 33.5 \times 3$$

$$29r = 100.5$$

$$r = \frac{100.5}{29}$$

$$\boxed{r = 3.6\%}$$

- 10) A man took loan from a bank at the rate of 12% p.a. Simple interest After 3 years he had to pay Rs. 5400 interest only for the period. The Principal amount borrowed by him was:

$$12\% \times 3 \Rightarrow 36\% \longrightarrow 5400$$

Divide by 18

$$2\% \longrightarrow 300$$

$$1\% \longrightarrow 150$$

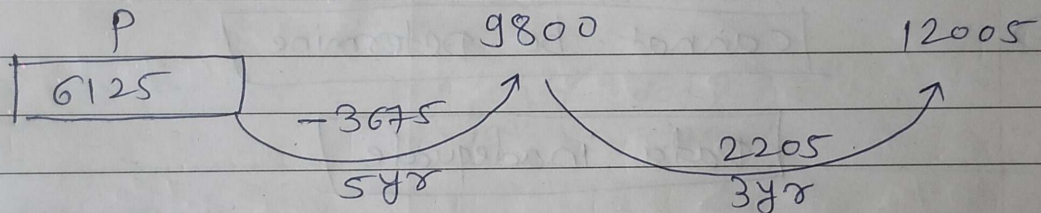
Principal amount is 100%

$$100\% \xrightarrow{\times 150} (15,000)$$

↓
principal amount

- 11) A sum of money amounts to Rs. 9800 after 5 years and Rs. 12005 after 8 years at the same rate of Simple interest. The rate of interest per annum.

⇒



$$3\text{ yr} \longrightarrow 2205$$

$$1\text{ yr} \longrightarrow \boxed{735}$$

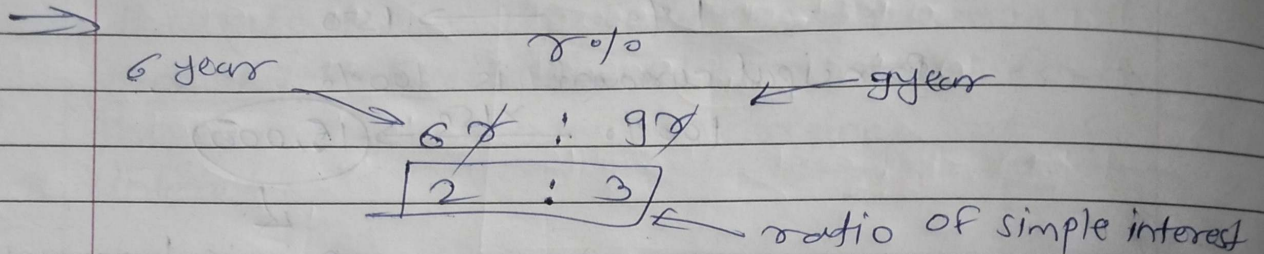
Calculate for 5 yr

$$5\text{ yr} \longrightarrow 735 \times 5 = \underline{\underline{3675}}$$

$$\begin{aligned} \text{Principal} &= 9800 - 3675 \\ &= \underline{\underline{6125}} \end{aligned}$$

$$\begin{aligned} \text{Rate of interest} &= \frac{735}{6125} \times 100\% \\ &= \frac{248}{248} \\ &= 3 \times 4 \\ &= \underline{\underline{12\%}} \end{aligned}$$

12) What will be the ratio of simple interest earned by certain amount at the same rate of interest for 6 years and that for 9 years?



13) A certain amount earns simple interest of Rs. 1750 after 7 years. Had the interest been 2% more, how much more interest could it have earned?

\Rightarrow cannot be determine
Data inadequate