

chapte-12 simple interest Exercise-13.1

Solution -ols-

(i) It is given that,

Principal (P) = Rs 2000.

Rate of interest (R) = 5% per annum.

Time = 5 years.

I = simple interest = ?

$$I = \frac{PRT}{100} = \frac{2000 \times 5\% \times 5 \text{ years}}{100}$$

$$= \frac{50000}{100} = \text{Rs. } 500$$

Simple interest is Rs. 500.

(ii) It is given that,

Principal (P) = Rs. 500.

Rate of interest = 12.5% per annum.

Time = 4 years. I = ?

$$I = \frac{PRT}{100} = \frac{500 \times 12.5 \times 4}{100} = \frac{500 \times 50}{100} = \text{Rs. } 250.$$

Simple interest = Rs. 250.

(iii) It is given that,

Principal (P) = Rs 4500, Rate of interest = 4% per annum

Time = 6 months.

Time = $\frac{6}{12}$ years = $\frac{1}{2}$ year [∵ 1 year = 12 months]

$$I = \frac{PRT}{100} = \frac{4500 \times \frac{1}{2} \times 4}{100} = \text{Rs. } 90. \quad \therefore I = 90.$$

(iv) Principal = Rs. 12000

Rate of interest = 18% per annum.

Time = 4 months = $\frac{4}{12}$ year. [\because 1 year = 12 months]

We know that,

$$I = \frac{PRT}{100} = \frac{12,000 \times 18 \times \frac{4}{12}}{100}$$

$$I = \frac{120 \times 72}{100}$$

$$I = \text{Rs. } 720$$

(v) Principal = Rs 1000.

Rate of interest = 10% per annum

and Time = 73 days.

We know That. $\left[\begin{array}{l} 1 \text{ year} = 365 \text{ days.} \\ \text{day} = \frac{1}{365} \text{ year} \end{array} \right]$

$$\text{Time} = \frac{73 \times 1}{365}$$

$$\text{Time} = \frac{1}{5} \text{ year.}$$

$$I = \frac{PRT}{100}$$

$$= \frac{1000 \times 10 \times \frac{1}{5}}{100}$$

$$= \frac{20}{100} \times 1000$$

$$= \text{Rs. } 20.$$

Simple interest = Rs. 20.

Solution-02:-

It is given that,

Principal (P) = Rs. 500

Time (T) = 4 years.

Rate of interest = 8% per annum

Interest = ?

$$I = \frac{PRT}{100}$$

$$= \frac{500 \times 4 \times 8}{100}$$

$$I = \text{Rs. } 160$$

Amount = Principal + Interest

$$= \text{Rs. } 500 + \text{Rs. } 160$$

$$= \text{Rs. } 660.$$

Solution-03:-

It is Given that,

Principal (P) = 400.

Rate of interest (R) = 5% per annum.

Time (T) = 2 years.

$$I = \frac{PRT}{100}$$

$$\text{Interest} = \frac{400 \times 5 \times 2}{100}$$

$$= \text{Rs. } 40.$$

$$\text{Interest} = \text{Rs. } 40.$$

Solution-04:-

Principal (P) = Rs 400.

Rate of interest (R) = 6%.

Time = 3 years.

Interest = ?

$$I = \frac{PRT}{100} = \frac{400 \times 6 \times 3}{100}$$
$$= Rs. 72.$$

Simple interest = Rs. 72.

Solution-05:-

Principal (P) = Rs 25,000.

Rate of interest (R) = 20% Percent Per annum.

Time = 1 year. [∵ per annum = 1 year]

Simple interest per annum = ? for every one year.

$$I = \frac{PRT}{100}$$
$$= \frac{25000 \times 20 \times 1}{100}$$
$$= Rs. 5,000$$

Simple interest Rs. 5,000 per year.

Solution-06:-

It is given that.

Principal (P) = Rs 8,000.

Rate of interest (R) = 8%.

Time period = $4\frac{1}{2}$ years. = $\frac{9}{2}$ years.

We know that,

Amount has to pay = Principal + Interest.

$$\text{Interest} = \frac{PRT}{100}$$
$$= \frac{8,000 \times 8 \times \frac{9}{2}}{100}$$

$$= 36 \times 80$$

$$= 2880$$

$$\therefore \text{Interest} = Rs. 2880.$$

$$\therefore \text{Amount has to pay} = 8,000 + 2,880 = Rs. 10,880.$$

Solution-07: Rakesh lent out

→ Principal = Rs. 8,000, Time = 5 years and Rate of interest = 15%

$$\text{Interest} = \frac{PRT}{100} = \frac{8,000 \times 5 \times 15}{100} = 400 \times 15 = 6,000.$$

Rakesh Borrowed.

Principal Rs = 6,000. Time = 3 years, Rate of interest = 12%

$$\text{Interest} = \frac{PRT}{100} = \frac{6,000 \times 3 \times 12}{100} = 180 \times 12 = Rs. 2160$$

Rakesh Gained money.

$$\text{i.e.} = \text{Rakesh lent out} - \text{Rakesh Borrowed}$$
$$= 6,000 - 2160 = 3840.$$

$$\therefore \text{Gain} = Rs. 3840. \quad [\because \text{lent} > \text{borrow}]$$

Solution-8:-

Anitha deposited Principal (P) = RS 1000.

Time = 1 year.

Rate of interest (R) = 5%.

Interest = ?.

Amount = ?.

$$\text{Interest} = \frac{PRT}{100} = \frac{1000 \times 5 \times 1}{100} = \text{RS } 50$$

Amount = Anitha deposited money + interest.

$$= \text{RS } 1000 + \text{RS } 50$$

$$= \text{RS } 1050.$$

∴ Money RS 1050 Anita get after one year.

Solution-09:-

Nalini borrowed = Principal = RS.550.

Rate of interest = 8%.

Time = 6 months. [Number of years = $\frac{\text{No. of months}}{12}$]

$$\text{Time} = \frac{6}{12} \text{ year} = \frac{1}{2} \text{ year}$$

$$\text{Interest} = \frac{PRT}{100} = \frac{550 \times 8 \times \frac{1}{2}}{100} = \frac{55 \times 8}{20} = \text{RS } 22$$

Amount = Principal + Interest

$$= \text{RS } 550 + \text{RS } 22 = \text{RS } 572.$$

∴ she has to pay after 6 months is RS 572.

Solution-10:-

Rohith. Borrowed money (P) = RS 60,000.

Rate of interest (R) = 9% Per annum

Time = 2 years.

Simple interest = ?.

$$I = \frac{PRT}{100} = \frac{60000 \times 9 \times 2}{100} = 1200 \times 9 = 10,800.$$

Interest = RS 10,800.

Rohith Lent principal (P) = RS 60,000.

Rate of interest (R) = 10% per annum.

Time = 2 years.

Simple interest = ?.

$$I = \frac{PRT}{100} = \frac{60,000 \times 10 \times 2}{100} = 12,000.$$

Rohith earned amount = Rohith lent interest -

Rohith borrowed interest

$$= 12,000 - 10,800$$

$$= \text{RS } 1200.$$

∴ Rohith earn from this transaction is RS 1200.

Solution-11:-

Romesh Borrowed.

Principal = 2,000.

Rate of interest = 2%.

Time period = 2 years.

$$\text{Interest for Rs 2,000} = \frac{PRT}{100} = \frac{2000 \times 2 \times 2}{100} \\ = \text{Rs } 80$$

Principal (P) = 1,000

Rate of interest (R) = 5%.

Time period = 2 years.

$$\text{Interest for Rs 1000} = \frac{PRT}{100} = \frac{1000 \times 5 \times 2}{100} \\ = \frac{10000}{100} \\ = \text{Rs } 100$$

$$\text{Interest has to pay} = \text{Interest for Rs 2,000} + \\ \text{Interest for Rs 1,000} \\ = \text{Rs } 80 + \text{Rs } 100 = \text{Rs } 180.$$

$$\text{Amount} = \text{Romesh Borrow principal} + \text{Interest has to pay} \\ = 2000 + 1000 + 100 + 80 = 3180$$

Romesh paid money = 2800.

$$\text{It is given that, Amount} = \text{Romesh paid} + \text{Watch amount} \\ \text{Watch Amount} = 3180 - 2800 = \text{Rs } 380$$

Solution-12:-

It is given that

Ms. Garg lent amount = Rs 15,000.

$$\text{Rest Money} = 15,000 - 12,500 \\ = 2,500.$$

Time period = 3 years.

Interest on Rs 12,500:-

Principal (P) = 12,500.

Time period (T) = 3 years.

Rate of interest = 15%.

$$\text{Interest} = \frac{PRT}{100} = \frac{12,500 \times 3 \times 15}{100} \\ = 375 \times 15 \\ = \text{Rs } 5,625.$$

Interest on Rs 2,500:-

Principal (P) = 2,500.

Time period (T) = 3 years.

Rate of interest = 18%.

$$\text{Interest} = \frac{PRT}{100} = \frac{2,500 \times 3 \times 18}{100} \\ = 75 \times 18 \\ = \text{Rs } 1350.$$

$$\text{Total interest has to pay for Rs 15,000} \\ = \text{interest for Rs 12,500} + \text{Interest for Rs 2,500} \\ = \text{Rs } 5,625 + \text{Rs } 1350 = \text{Rs } 6975. \\ \text{Interest he earned is Rs } 6975$$

Solution-13:-

Shikha deposited amount = Rs 2000. = Principal (P)

Rate of interest = 6%

$$\begin{aligned}\text{Interest for one year on Rs 2000} &= \frac{PRT}{100} \\ &= \frac{PR}{100} \quad [\text{Time} = 1 \text{ year}] \\ &= \frac{2000 \times 6}{100} \\ &= \text{Rs. } 120.\end{aligned}$$

She withdrew Rs 700 at year Means.

$$\begin{aligned}\text{Shikha deposited amount in Bank} &= \text{Rs } 2,000 - \text{Rs } 700 \\ &= \text{Rs } 1,300\end{aligned}$$

$$\begin{aligned}\text{Interest for Rs } 1,300 &= \frac{1300 \times 6 \times 2}{100} \quad [T = 2 \text{ years}] \\ & \quad R = 6\% \\ &= \text{Rs } 156.\end{aligned}$$

Shikha Balance After 3 years = 1300 +

Interest for one year on Rs 2,000

Interest on amount 1300 for 2 years

$$\begin{aligned}&= 1300 + 120 + 156 \\ &= \text{Rs } 1576.\end{aligned}$$

∴ Shikha Balance after 3 years is Rs 1,576.

Solution-14:-

Here, Principal (P) = Loan = 8000

Rate of interest (R) = 18%

Time period = 2 years

Interest = I,

$$\begin{aligned}I &= \frac{PRT}{100} \\ &= \frac{8000 \times 18 \times 2}{100} \\ &= 160 \times 18 \\ &= \text{Rs } 2880.\end{aligned}$$

Total amount Reema has to pay = Principal + interest

$$\begin{aligned}&= \text{Rs } 8000 + \text{Rs } 2880 \\ &= \text{Rs } 10,880.\end{aligned}$$

Reema paid Total amount = 10,400 + wrist watch

∴ wrist watch cost = Total amount - 10,400

$$= 10,880 - 10,400$$

$$= 480$$

$$= \text{Rs } 480$$

∴ wrist watch cost = Rs 480.

Solution-15:-

Here, principal (P) = Rs 20,000.

Rate of interest (R) = 10%.

Time period (T) = 1 annum.

Interest = ?

$$\begin{aligned} \text{Interest} &= \frac{PRT}{100} \\ &= \frac{20,000 \times 10 \times 1}{100} \\ &= \text{Rs. } 2,000 \end{aligned}$$

$$\begin{aligned} \text{Income tax on interest earned} &= \frac{2,000 \times 30}{100} \\ &= \text{Rs. } 600 \end{aligned}$$

$$\begin{aligned} \text{Income tax on interest earned} &= \text{Rs. } 600. \\ &= \text{Rs. } 600. \end{aligned}$$

$$\begin{aligned} \text{his annual income} &= \text{Interest} - \text{income tax} \\ &= 2,000 - 600 \\ &= \text{Rs. } 1,400. \end{aligned}$$

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