

RD Sharma  
Solutions

# Class 7

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Ch-13Simple InterestExercise 13.1

Q.1 Find the simple interest, when:

(i) Principal = Rs 2000, Rate of Interest = 5% P.a

Time = 5 years.

Solution:  $S.I = \frac{P \times R \times T}{100} = \frac{2000 \times 5 \times 5}{100} = \text{Rs. } 500$

QID  $P = \text{Rs } 500$ ,  $R\% = 12.5\% \text{ P.a}$ ,  $T = 4 \text{ years}$ .

Sol:  $SI = \frac{P \times R \times T}{100} = \frac{500 \times 12.5 \times 4}{100} = \text{Rs. } 250$

QIID  $P = \text{Rs } 4500$ ,  $R = 4\% \text{ P.a}$ ,  $T = 6 \text{ months}$ .

Solution:  $SI = \frac{P \times R \times T}{100} = \frac{4500 \times 4 \times \frac{1}{2}}{100}$   $\left\{ \because 6 \text{ Months} \right.$   
 $= \frac{6}{12} = \frac{1}{2} \text{ year}$   
 $= \text{Rs. } 90$

(iv) Principal = Rs. 12000,  $R = 18\% \text{ P.a}$ ,  $T = 4 \text{ months}$ .

Sol:  $SI = \frac{P \times R \times T}{100} = \frac{12000 \times 18 \times \frac{1}{3}}{100}$   $\left\{ \because 4 \text{ Months} \right.$   
 $= \frac{4}{12} = \frac{1}{3} \text{ years}$   
 $= \text{Rs. } 720$

(v) Principal = Rs 1000,  $R = 10\%$  p.a,  $T = 73$  days

Sol:  $\therefore 73 \text{ days} = \frac{73}{365} \text{ years}$   
 $= \frac{1}{5} \text{ years}$

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

$$= \frac{1000 \times 10 \times \frac{1}{5}}{100} = \text{Rs. } 50$$

Q.2 Find the interest on Rs. 500 for a period of 4 years at the rate of 8% per annum. Also, find the amount to be paid at the end of the period.

Solution: here, Principal = Rs. 500,  $T = 4$  years  
 $R = 8\%$  p.a

$$S.I = \frac{P \times R \times T}{100} = \frac{500 \times 8 \times 4}{100} = \text{Rs. } 160$$

$$\therefore \text{Amount} = \text{Principal} + \text{Simple Interest}$$

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

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

Q.3 A sum of Rs. 400 is lent at the rate of 5% per annum. Find the interest at the end of 2 years.

Solution: here, Principal = Rs. 400,  $R = 5\%$  p.a.  
 $T = 2$  years.

$$\begin{aligned}\text{Interest at the end of 2 year} &= \frac{P \times R \times T}{100} \\ &= \frac{400 \times 5 \times 2}{100} = \text{Rs. } 40\end{aligned}$$

Q.4 A sum of Rs. 400 is lent for 3 years at the rate of  $6\%$  p.a. Find the interest.

Solution: here,  $P = \text{Rs } 400$ ,  $T = 3$  years,  $R = 6\%$  p.a.

$$\text{S.I} = \frac{P \times R \times T}{100} = \frac{400 \times 6 \times 3}{100} = \text{Rs. } 72.$$

Q.5 A person deposits Rs. 25000 in a firm who pays an interest at the rate of  $20\%$  Per annum. Calculate the income he gets from it annually.

Solution: here, Principal = Rs. 25000  
 Rate of Interest =  $20\%$  Per annum.

$$\begin{aligned}\text{Income he gets annually} &= \frac{P \times R \times T}{100} \\ &= \frac{25000 \times 20 \times 1}{100} = \text{Rs. } 5000\end{aligned}$$

Q6 A man borrowed Rs. 8000 from a bank at 8% per annum. Find the amount he has to pay after  $4\frac{1}{2}$  years.

Solution: here,  $P = \text{Rs } 8000$ , Rate of Interest = 8%  
Time =  $4\frac{1}{2}$  year =  $\frac{9}{2}$  year.

Interest to be paid after  $4\frac{1}{2}$  year

$$= \frac{P \times R \times T}{100} = \frac{8000 \times 8 \times \frac{9}{2}}{100}$$

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

$$\therefore \text{Total Amount to be paid} = \text{Rs } 8000 + \text{Rs } 2880$$

$$= \text{Rs } 10880$$

Q7 Rakesh lent out Rs. 8000 for 5 years at 15% per annum and borrowed Rs 6000 for 3 years at 12% per annum. How much did he gain or lose?

Solution: here,  $P = \text{Rs. } 8000$ ,  $T = 5$  years  
 $R = 15\%$  p.a

Interest earned by Rakesh =  $\frac{P \times R \times T}{100} = \frac{8000 \times 15 \times 5}{100}$

$$= \text{Rs } 6000$$

Again, Amount borrowed = Rs 6000 ,

Time = 3 years

R = 12% p.a

$$\text{Interest given} = \frac{P \times R \times T}{100} = \frac{6000 \times 12 \times 3}{100}$$

$$= \text{Rs } 2160$$

$$\text{Profit} = \text{Rs } 6000 - \text{Rs } 2160$$

$$= \text{Rs } 3840$$

Q.8 Anita deposits Rs. 1000 in a savings bank account

The bank pays interest at the rate of 5% per annum.  
What amount can Anita get after one year?

Solution: Amount deposited (Principal) = Rs 1000

Rate = 5% p.a

Time = 1 year

$$\text{Interest at the end of one year} = \frac{1000 \times 5 \times 1}{100}$$

$$= \text{Rs } 50$$

$$\therefore \text{Amount she received at the end of 1 year}$$

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

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

Q.9 Nalini borrowed Rs 550 from her friend at 8% per annum. She returned the amount after 6 months. How much did she pay?

Solution: Amount borrowed (Principal) = Rs 550

$$R = 8\% \text{ p.a}$$

$$T = 6 \text{ Months} = \frac{6}{12} \text{ year}$$

$$= \frac{1}{2} \text{ year.}$$

$$\text{Interest given} = \frac{P \times R \times T}{100}$$

$$= \frac{550 \times 8 \times \frac{1}{2}}{100} = \text{Rs } 22$$

$$\begin{aligned} \text{Therefore, amount did she pay} &= \text{Rs } 550 + \text{Rs. } 22 \\ &= \text{Rs. } 572 \end{aligned}$$

Q.10 Rohit borrowed Rs 60000 from a bank at 9% per annum for 2 years. He lent this sum of money to Rohan at 10% per annum for 2 years. How much did Rohit earn from this transaction?

Solution: Given Principal = Rs. 60000,  $T = 2$  years  
 $R = 9\% \text{ p.a}$

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{60000 \times 2 \times 9}{100}$$

$$= \text{Rs. } 10800$$

Now Principal = Rs 60000,  $T = 2$  years,  $R = 10\%$  p.a.

$$\text{Simple Interest} = \frac{60000 \times 10 \times 2}{100} = \text{Rs. } 12000.$$

$$\therefore \text{Amount gained by Rohit} = \text{Rs } 12000 - \text{Rs } 10800 \\ = \text{Rs. } 1200$$

Q.11 Ramesh borrowed Rs 2000 at 2% p.a and Rs 1000 at 5% p.a. He cleared his debt after 2 years by giving Rs. 2800 and a watch. What is the cost of watch?

Solution: here  $P = \text{Rs } 2000$ ,  $R = 2\%$  p.a,  $T = 2$  yrs.

$$\text{Interest} = \frac{P \times R \times T}{100} = \frac{2000 \times 2 \times 2}{100} = \text{Rs. } 80$$

Now,  $P = \text{Rs } 1000$ ,  $R = 5\%$  p.a,  $T = 2$  yrs.

$$\text{Interest} = \frac{P \times R \times T}{100} = \frac{1000 \times 5 \times 2}{100} = \text{Rs. } 100.$$

Total amount that will have to return

$$= \text{Rs } 2000 + 1000 + 80 + 100$$

$$= \text{Rs. } 3180$$

$$\text{Amount repaid} = \text{Rs } 2800$$

$$\therefore \text{Value of watch} = \text{Rs } 3180 - \text{Rs } 2800 = \text{Rs. } 380$$

Q.12 Mr. Garg lent Rs 15000 to his friend. He charges 15% per annum on Rs. 12500 and 18% on the rest. How much interest does he earn in 3 years.

Solution: here, Principal = Rs. 12500,  $R = 15\%$  P.a  
 $T = 3$  years.

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{12500 \times 15 \times 3}{100} \\ = \text{Rs. } 5625$$

$$\text{Rest of the amount lent} = \text{Rs } 15000 - \text{Rs } 12500 \\ = \text{Rs } 2500$$

$$R = 18\% \text{ P.a} \\ T = 3 \text{ years.}$$

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{2500 \times 18 \times 3}{100} \\ = \text{Rs } 1350.$$

$$\therefore \text{Total Interest earned} = \text{Rs } 5625 + \text{Rs } 1350 \\ = \text{Rs. } 6975$$

Q.13 Shikha deposited Rs 2000 in a bank which pays 6% Simple Interest. She withdrew Rs 700 at the end of first year. What will be her balance after 3 years.

Solution: here, Principal = Rs. 2000,  $R = 6\%$  P.a

$$T = 1 \text{ year.}$$

$$S.I = \frac{2000 \times 1 \times 6}{100} = \text{Rs. } 120$$

$$\therefore \text{Amount after 1 year} = \text{Rs } 2000 + \text{Rs } 120 \\ = \text{Rs. } 2120$$

$$\text{Amount withdrawn} = \text{Rs } 700$$

$$\text{Principal Amount left} = \text{Rs } 2120 - \text{Rs } 700 = \text{Rs } 1420$$

$$T = 2 \text{ years}$$

$$R = 6\% \text{ p.a.}$$

$$\therefore S.I = \frac{P \times R \times T}{100} = \frac{1420 \times 2 \times 6}{100} = \text{Rs } 170.40$$

$$\therefore \text{Total Amount after 3 years} = \text{Rs } 1420 + \text{Rs } 170.40 \\ = \text{Rs } 1590.40$$

Q.14 Reema took a loan of Rs. 8000 from a money lender, who charged interest at the rate of 18% per annum. After 2 years, Reema paid him Rs 10400 and wrist watch to clear the debt. What is the price of the watch?

Solution: here,  $P = \text{Rs. } 8000$ ,  $R = 18\% \text{ p.a.}$ ,  $T = 2 \text{ years.}$

$$\text{Simple Interest} = \frac{P \times R \times T}{100} = \frac{8000 \times 18 \times 2}{100} \\ = \text{Rs } 2880$$

$$\therefore \text{The amount to be paid} = \text{Rs } 8000 + \text{Rs } 2880 \\ = \text{Rs } 10880$$

$$\text{Amount Repaid} = \text{Rs } 10400$$

$$\therefore \text{Cost of wrist watch} = \text{Rs } 10880 - \text{Rs } 10400 \\ = \text{Rs. } 480$$

Q.15 Mr. Sharma deposited Rs. 20000 as a fixed deposit in a bank at 10% per annum. If 30% is deducted as income tax on the interest earned. Find his annual income.

Solution: Here,  $P = \text{Rs } 20000$ ,  $R = 10\% \text{ p.a.}$ ,  $T = 1 \text{ year}$

$$\text{Interest earned in 1 year} = \frac{P \times R \times T}{100}$$

$$= \frac{20000 \times 10 \times 1}{100} = \text{Rs } 2000$$

$$\text{Amount deducted in Income tax} = 30\% \text{ of } 2000$$

$$= \frac{30}{100} \times 2000 = \text{Rs } 600$$

$$\therefore \text{Annual Income} = \text{Rs } 2000 - \text{Rs } 600 \\ = \text{Rs. } 1400$$