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INTEREST

PERIOD 1

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 9
CHAPTER NAME : INTEREST

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Learning outcome

The children will be able calculate simple ***Interest*** .

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Review:

Simple interest: When interest is calculated on the original principal for any length of time, it is called simple interest.

Simple Interest Formula

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

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EXERCISE-9A

Question 1.

Find the interest and the amount on:

(i) ₹ 750 in 3 years 4 months at 10% per annum.

(ii) ₹ 5,000 at 8% per year from 23rd December 2011 to 29th July 2012.

(iii) ₹ 2,600 in 2 years 3 months at 1% per month.

(iv) ₹ 4,000 in 113 years at 2 paise per rupee per month.

(*i*) Given P = ₹750

Time (T) = $3\frac{4}{12} = 3\frac{1}{3}$

$= \frac{10}{3}$ years

Rate (R) = 10%

$\therefore$ Interest (I) = $\frac{PRT}{100} = \frac{750 \times 10 \times \frac{10}{3}}{100}$

$= \frac{250 \times 10 \times 10}{100}$ = ₹250

$\therefore$ Amount (A) = P + I = ₹750 + ₹250 = ₹1000

(*ii*) Principal (P) = ₹5000

Rate (R) = 8% p.a.

Time (T) = 23 December 2011 to 29 July 2012

Dec.	Jan.	Feb.	March	April	May	June	July
8	31	29	31	30	31	30	29

Total 219 days = $\frac{219}{365}$ years

$\therefore$ Interest = $\frac{PRT}{100} = \frac{5000 \times 8 \times 219}{100 \times 365}$

$= 10 \times 8 \times 3$ = ₹240

$\therefore$ Amount = P + I = ₹5000 + 240 = ₹5240

EXERCISE-9A

Question 2.
Rohit borrowed Rs. 24,000 at 7.5 percent per year. How much money will he pay at the end of 4th years to clear his debt?

Solution:

Principal (P) = Rs. 24,000

Rate (R) = 7.5% P.A.

Time (T) = 4 years

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

$$= \text{Rs. } \frac{24{,}000 \times 4 \times 7.5}{100}$$

$$= \text{Rs. } 240 \times 4 \times 7.5$$

$$= 240 \times 30 = \text{Rs. } 7200$$

Amount needed to clear the debt at the end of 4th year

= Rs. 24000 + Rs. 7200 = Rs. 3,1200

EXERCISE-9A

Question 6.

(i) At what rate per cent per annum will Rs. 630 produce an interest of Rs. 126 in 4 years ?

(ii) At what rate per cent per year will a sum double itself in 6 years 3 months.

Solution:

(i) P = Rs. 630, I = Rs. 126, T = 4 years

$$R = \frac{100 \times I}{P \times T} = \frac{100 \times 126}{630 \times 4} = \frac{100}{20} = 5\%$$

(ii) Let P = Rs. 100

$\therefore$ Amount = 2 × Rs. 100 = Rs. 200

Interest = A – P

= Rs. 200 – Rs. 100 = Rs. 100

$$T = 6\frac{1}{4} \text{ years} = \frac{25}{4} \text{ years}$$

$$R = \frac{100 \times I}{P \times T} = \frac{100 \times 100}{100 \times \frac{25}{4}}\% = \frac{100 \times 100}{100} \times \frac{4}{25} = 16\%$$

Home Assignment

Ex-9A Q No- 1to 7

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THANKING YOU

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