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INTEREST

PERIOD 2

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 9
CHAPTER NAME : INTEREST

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Learning outcome

The children will be able calculate compound interest by simple interest method.

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EXERCISE-9B

Question 1.

The interest on a certain sum of money is 0.24 times of itself in 3 years. Find the rate of interest.

Solution:

Let the sum borrowed = Rs. 100

Time = 3 years

Let rate of interest = $r\%$

$$\therefore \text{ Interest} = \frac{100 \times 3 \times r}{100} \qquad \left[\because \text{S.I.} = \frac{P \times R \times T}{100}\right]$$

$$= 3r = (0.24)\ (100) = 24$$

(Given)

$$\Rightarrow r = \frac{24}{3} = 8$$

Hence reqd. rate of interest = 8%

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EXERCISE-9B

Question 3.

A sum of money, lent out at simple interest, doubles itself in 8 years. Find :

(i) the rate of interest

(ii) in how many years will the sum become triple (three times) of itself at the same rate percent?

Solution:

Let P = Rs. 100 A = Rs. 200

I = Rs. 200 – Rs. 100 = Rs. 100, T = 8 years

$$R = \frac{100 \times I}{P \times T} = \frac{100 \times 100}{100 \times 8} = \frac{100}{8} = \frac{25}{2}\%$$

Now again P = Rs. 100

A = Rs. 300 I = Rs. 300 – Rs. 100

= Rs. 200

$$R = \frac{25}{2}\%$$

$$T = \frac{100 \times I}{P \times R} = \frac{100 \times 200}{100 \times \frac{25}{2}} = \frac{100 \times 200 \times 2}{100 \times 25} = 16 \text{ years}$$

So the given sum of money will become triple in 16 years.

EXERCISE-9B

Question 4.

Rupees 4000 amount to Rs.5000 in 8 years ; in what time will Rs.2100 amount to Rs.2800 at the same rate ?

Solution:

In first case :

$$A = \text{Rs.}5000$$
$$P = \text{Rs.}4000$$
$$I = A - P$$
$$= \text{Rs.}5000 - \text{Rs.}4000$$
$$= \text{Rs.}1000$$
$$T = 8 \text{ years}$$
$$R = \frac{100 \times I}{P \times R}$$
$$= \frac{100 \times 1000}{4000 \times 8}$$
$$= \frac{25}{8}\%$$

In the second case :

$$A = \text{Rs.}2800$$
$$P = \text{Rs.}2100$$
$$I = \text{Rs.}2800 - \text{Rs.}2100 = \text{Rs.}700$$
$$R = \frac{25}{8}\%$$
$$T = \frac{100 \times I}{P \times R} = \frac{100 \times 700}{2100 \times \frac{25}{8}}$$
$$= \frac{100 \times 700 \times 8}{2100 \times 25} = \frac{32}{3} \text{ years} = 10\frac{2}{3} \text{ years}$$
$$= 10\frac{2}{3} \times 12 \text{ months} = 10\frac{24}{3} \text{ months}$$
$$= 10 \text{ years } 8 \text{ months}$$

Home Assignment

Exercise 9(B) - 1 to 5

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THANKING YOU

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