

Percentage

Lecture sheet – 4

Creative Question

1. Shamol Chakma borrowed 4500 Taka from a bank and an annual interest of 8% were always charged on the principal.

a) How much Taka would he pay back in 10 years?

b) several years later, the annual interest summed up to 2520 Taka. How many years did he borrow?

Solution:

a) Given,

Principal = 4500 tk

Rate of Interest = 8%

Time = 10 years

We know,

$$\begin{aligned}\text{Interest} &= \frac{\text{Principal} \times \text{Rate of Interest} \times \text{Time}}{100} \\ &= \frac{4500 \times 8 \times 10}{100} \text{tk} \\ &= 3600 \text{tk}\end{aligned}$$

He would pay back in 10 years = Principal + Interest

$$= (4500 + 3600) \text{tk}$$

$$= 8100 \text{tk}$$

Ans: 8100 tk

b) Given,

Principal = 4500 tk

Rate of Interest = 8 %

Interest = 2520 tk

We know,

$$\begin{aligned}\text{Time} &= \frac{\text{Interest} \times 100}{\text{Principal} \times \text{Rate of Interest}} \\ &= \frac{2520 \times 100}{4500 \times 8} \\ &= 7 \text{ years}\end{aligned}$$

Ans: 7 years

2. Shiratul borrowed 3000 Taka from a bank and paid back 3300 Taka after a year.

a. What was the annual interest rate of the bank?

b. How much Taka would he pay back after 2 years if he borrowed 10000 Taka?

Solution:

a) Given,

Principal = 3000 tk

Amount = 3300 tk

Interest = Amount - Principal

$$= (3300 - 3000) \text{ tk}$$

$$= 300 \text{ tk}$$

Time = 1 year

We know,

$$\begin{aligned}\text{Rate of interest} &= \frac{\text{Interest} \times 100}{\text{Principal} \times \text{Time}} \% \\ &= \frac{300 \times 100}{3000 \times 1} \% \\ &= 10 \%\end{aligned}$$

Ans: 10 %

b) Given,

$$\text{Principal} = 10000 \text{ tk}$$

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

From 'a' we get, Rate of interest = 10%

We know,

$$\begin{aligned}\text{Interest} &= \frac{\text{Principal} \times \text{Rate of Interest} \times \text{Time}}{100} \\ &= \frac{10000 \times 10 \times 2}{100} \text{ tk} \\ &= 2000 \text{ tk}\end{aligned}$$

He will pay back after 2 years = (10000+2000) tk

$$= 12000 \text{ tk}$$

Ans: 12000 tk

Exercise (Do yourself):

1. Some money was borrowed from a bank with an annual interest of 20% and paid the total annual interest 2000 taka.
 - a. How much was the principal?
 - b. How much was the principal and interest total?
 - c. How much interest would be paid if the annual interest rate was 15%?
2. Rony borrowed 4500 Taka from a bank and an annual interest of 8% were always charged on the principal.
 - a. Write down the formula of “Annual interest”.
 - b. How much taka would he pay back as interest in 8 years?
 - c. How much money would he pay back after 8 years?