CLASS VIII: Maths
Chapter 7: Comparing Quantities

Questions and Solutions | Exercise 7.3 - NCERT Books

Q 1. The population of a place increased to 54000 in 2003 at a rate of 5% per annum

(i) find the population in 2001

(ii) what would be its population in 2005?

Answer :

(i) It is given that, population in the year 2003 = 54,000

Therefore,

$$54000 = \text{(Population in 2001)} \left(1 + \frac{5}{100}\right)^2$$

Population in 2001 $= 54000 \times \frac{20}{21} \times \frac{20}{21}$ = 48979.59

Thus, the population in the year 2001 was approximately 48,980.

(ii) Population in 2005 $= 54000 \left(1 + \frac{5}{100}\right)^2$

$$= 54000 \left(1 + \frac{1}{20}\right)^2 = 54000 \times \frac{21}{20} \times \frac{21}{20} = 59,535$$

Thus, the population in the year 2005 would be 59,535.

Q 2. In a laboratory, the count of bacteria in a certain experiment was increasing at the rate of 2.5% per hour. Find the bacteria at the end of 2 hours if the count was initially 5,06,000.

Answer :

The initial count of bacteria is given as 5,06,000.

Bacteria at the end of 2 hours $= 506000 \left(1 + \frac{2.5}{100}\right)^2$

$$= 506000\left(1+\frac{1}{40}\right)^2 = 506000 \times \frac{41}{40} \times \frac{41}{40}$$
$$= 531616.25 = 5,31,616 \text{ (approx.)}$$

Thus, the count of bacteria at the end of 2 hours will be 5,31,616 (approx.).

Q 3. A scooter was bought at Rs 42,000. Its value depreciated at the rate of 8% per annum. Find its value after one year.

Answer :

Principal = Cost price of the scooter = Rs 42,000

Depreciation = 8% of Rs 42,000 per year

$$= \text{Rs}\left(\frac{42000 \times 8 \times 1}{100}\right)$$
$$= \text{Rs } 3,360$$

Value after 1 year = Rs 42000 - Rs 3360 = Rs 38,640