



Compound Interest Ex 14.4 Q4

Answer :

Here,

P = Initial population = 50,000

$R_1 = 4\%$

$R_2 = 5\%$

$R_3 = 3\%$

n = Number of years = 3

$$\begin{aligned}\therefore \text{Population after three years} &= P \left(1 + \frac{R_1}{100}\right) \left(1 + \frac{R_2}{100}\right) \left(1 + \frac{R_3}{100}\right) \\ &= 50,000 \left(1 + \frac{4}{100}\right) \left(1 + \frac{5}{100}\right) \left(1 + \frac{3}{100}\right) \\ &= 50,000(1.04)(1.05)(1.03) \\ &= 56,238\end{aligned}$$

Hence, the population after three years is 56,238.

Compound Interest Ex 14.4 Q5

Answer :

$$\text{Population after three years} = P \left(1 + \frac{R}{100}\right)^n$$

$$9,261 = P \left(1 + \frac{5}{100}\right)^3$$

$$9,261 = P(1.05)^3$$

$$\begin{aligned}P &= \frac{9,261}{1.157625} \\ &= 8,000\end{aligned}$$

Thus, the population three years ago was 8,000.

Compound Interest Ex 14.4 Q6

Answer :

Let the annual rate of growth be R .

$$\therefore \text{Production of scooters after three years} = P \left(1 + \frac{R}{100}\right)^n$$

$$46,305 = 4,000 \left(1 + \frac{R}{100}\right)^3$$

$$(1 + 0.01R)^3 = \frac{46,305}{40,000}$$

$$(1 + 0.01R)^3 = 1.157625$$

$$(1 + 0.01R)^3 = (1.05)^3$$

$$1 + 0.01R = 1.05$$

$$0.01R = 0.05$$

$$R = 5$$

Thus, the annual rate of growth is 5%.

***** END *****

