



Compound Interest Ex 14.4 Q7

Answer :

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

$$196,830 = P \left(1 + \frac{8}{100} \right)^3$$

$$196,830 = P(1.08)^3$$

$$P = \frac{196,830}{1.259712}$$
$$= 156,250$$

Thus, the population three years ago was 156,250.

Compound Interest Ex 14.4 Q8

Answer :

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

$$22,050 = P \left(1 + \frac{50}{1000} \right)^2$$

$$22,050 = P(1.05)^2$$

$$P = \frac{22,050}{1.1025}$$
$$= 20,000$$

Thus, the population two years ago was 20,000.

Compound Interest Ex 14.4 Q9

Answer :

Given :

$$R_1 = 10\%$$

$$R_2 = -8\%$$

$$R_3 = 12\%$$

$$P = \text{Original count of bacteria} = 13,125,000$$

We know that :

$$P \left(1 + \frac{R_1}{100} \right) \left(1 - \frac{R_2}{100} \right) \left(1 + \frac{R_3}{100} \right)$$

$$\therefore \text{Bacteria count after three hours} = 13,125,000 \left(1 + \frac{10}{100} \right) \left(1 - \frac{8}{100} \right) \left(1 + \frac{12}{100} \right)$$

$$= 13,125,000(1.10)(0.92)(1.12)$$

$$= 14,876,400$$

Thus, the bacteria count after three hours will be 14,876,400.

***** END *****