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 **********