

9. Principal (P) = Rs 4096

time (n) = 18 months = 3 h.y.

rate (R) = $\frac{25}{2}$ % p.a. = $\frac{25}{4}$ % h.y.

amount = $P \left(1 + \frac{R}{100}\right)^n$

= 4096 $\left(1 + \frac{25}{400}\right)^3$

= ~~4096~~¹ × ~~425~~¹⁷/₄₀₀¹⁶ × ~~425~~¹⁷/₄₀₀¹⁶ × ~~425~~¹⁷/₄₀₀¹⁶

= Rs 4913

10. Population in 2003 (P_{2003}) = 54000

rate (R) = 5% p.a.

Population in 2005 (P_{2005}) = $P_{2003} \left(1 + \frac{R}{100}\right)^2$

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

= ~~54000~~²⁷ × ~~105~~²¹/₁₀₀ × ~~105~~²¹/₁₀₀

= 59535

$P_{2003} = P_{2001} \left(1 + \frac{R}{100}\right)^n$

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

= $P_{2001} \left(\frac{105}{100}\right)^2$

$P_{2001} = 54000 \times \frac{100}{105} \times \frac{100}{105}$

= 48979.59

= 48980