

Substitute the value 300,000 in the formula: $300,000 = 100,000e^{0.05t}$

Divide both sides by 100,000: $3 = e^{0.05t}$

Take logarithms of both sides of the equation: $\ln 3 = \ln e^{0.05t}$

Because $\log_b b^m = m$, we have $\ln e^{0.05t} = 0.05t$, and therefore $\ln 3 = 0.05t$.

Divide both sides by 0.05 to find t : $t = \frac{\ln 3}{0.05}$