

Applications of Exponential Functions

Population

Write an equation to model the population after n years, if the population triples...

- ① every 2 years. ② every 6 months ($\frac{1}{2}$ year)

$$P(n) = P_0(3^{n/2}) \qquad P(n) = P_0(3^{2n}) \rightarrow P_0(9^n)$$

Graph both functions ($P_0=1$) and compare "steepness."

Describe the population after 4 years.

① $P = 9 \times P_0$ ② $P = 6561 \times P_0$