Exponential Modeling

To model a real world exponential growth situation:

To model a real world exponential decay situation:

a =

r =

t =

Example 1: The population of Detroit in 1980 was 1,203,000. Since then, the population has decreased at a rate of 1.44% each year. Using 1980 as “year 0,” calculate the population of Detroit in 2018.

Example 2: Suppose you buy a car for $24,000. The value of the car depreciates by 16% each year. Estimate the value after 4 years.

Example 3: A culture of 100 bacteria is put into a petri dish and doubles every hour. How many bacteria will be present after 12 hours?