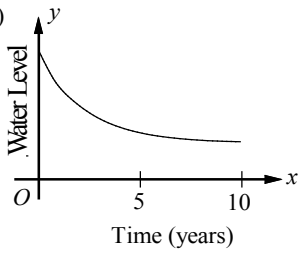
Exercises - Exponential Functions and Graphs

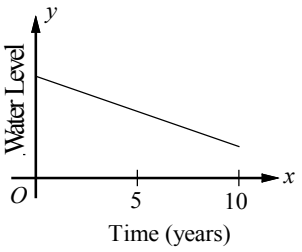
1

During a decade of continuous drought, the water level of a lake has decreased by 10 percent each year. Which of the following graphs could model the water level of the lake as a function of time?

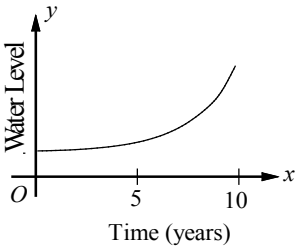
A)



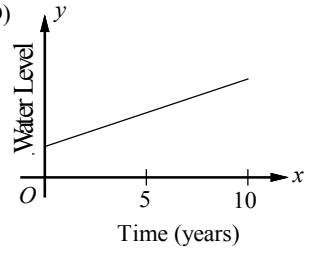
B)



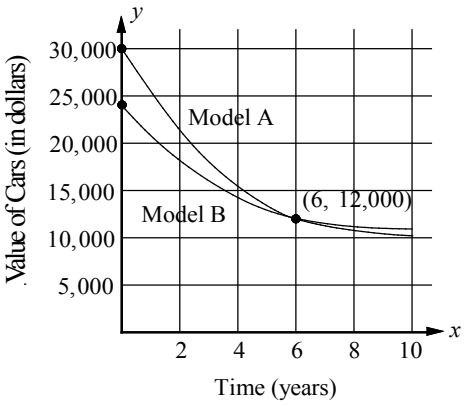
C)



D)



2



In the graph above, each exponential curve represents the values, in dollars, of two different cars as a function of time in years. At time $t = 0$, the price of model A was \$30,000 and the price of model B was \$24,000. At time $t = 6$, the price of both models were \$12,000.
Based on the graphs above, which of the following must be true?

I. At time $t = 0$, the price of model A was 25% more than the price of model B.

II. At time $t = 0$, the price of model B was 20% less than the price of model A.

III. From time $t = 0$ to $t = 6$, the average rate of decrease in the value of model A was 1.5 times the average rate of decrease in the value of model B.

A) I and II only

B) I and III only

C) II and III only

D) I, II, and III

3

If $f(x) = 12,000(0.9)^x$ and $g(x) = 14,000(0.85)^x$, what is the value of $g(2) - f(2)$?