Name

Exponential Function Solution Equation - Decay (Continuous) Scenario to Starting Value

1

A bird population starts at a certain size. It declines continuously at 8% per quarter. After 7 quarters it has decreased to a population of 228.

Rearrange the exponential equation to solve for for the starting population given this scenario?

A $P_0 = \frac{e^{(-0.08 \cdot 7)}}{228}$

B $P_0 = \frac{228}{e^{(-0.08 \cdot 7)}}$

C $P_0 = \frac{228}{e^{(\frac{-0.08}{7})}}$

2

A whale population starts at a certain size. It declines continuously at 6% per year. After 8 years it has decreased to a population of 433 whales.

Rearrange the exponential equation to solve for for the starting population given this scenario?

A $P_0 = \frac{e^{(-0.06 \cdot 8)}}{433}$

B $P_0 = \frac{433}{e^{(\frac{-0.06}{8})}}$

C $P_0 = \frac{433}{e^{(-0.06 \cdot 8)}}$

3

A whale population starts at a certain size. It declines continuously at 7% per quarter. After 8 quarters it has decreased to a population of 514 whales.

Rearrange the exponential equation to solve for for the starting population given this scenario?

A $P_0 = \frac{514}{e^{(\frac{-0.07}{8})}}$

B $P_0 = \frac{e^{(-0.07 \cdot 8)}}{514}$

C $P_0 = \frac{514}{e^{(-0.07 \cdot 8)}}$

4

A bacteria population starts at a certain size. It declines continuously at 8% per week. After 3 weeks it has decreased to a population of 707 bacteria.

Rearrange the exponential equation to solve for for the starting population given this scenario?

A $P_0 = \frac{707}{e^{(\frac{-0.08}{3})}}$

B $P_0 = \frac{e^{(-0.08 \cdot 3)}}{707}$

C $P_0 = \frac{707}{e^{(-0.08 \cdot 3)}}$

5

A toxin starts at a certain concentration. It declines continuously at 9% per day. After 5 days it has decreased to a concentration of 510mg/L.

Rearrange the exponential equation to solve for for the starting concentration given this scenario?

A $C_0 = \frac{510}{e^{(-0.09 \cdot 5)}}$

B $C_0 = \frac{510}{e^{(\frac{-0.09}{5})}}$

6

A radioactive material starts at a certain isotope concentration. It decays continuously at 3% per week. After 8 weeks it has decayed to an isotope concentration of 157ppm.

Rearrange the exponential equation to solve for for the starting concentration given this scenario?

A $R_0 = \frac{157}{e^{(-0.03 \cdot 8)}}$

B $R_0 = \frac{e^{(-0.03 \cdot 8)}}{157}$

7

A toxin starts at a certain concentration. It declines continuously at 7% per week. After 4 weeks it has decreased to a concentration of 453mg/L.

Rearrange the exponential equation to solve for for the starting concentration given this scenario?

A $C_0 = \frac{453}{e^{(-0.07 \cdot 4)}}$

B $C_0 = \frac{453}{e^{(\frac{-0.07}{4})}}$

C $C_0 = \frac{e^{(-0.07 \cdot 4)}}{453}$

8

A toxin starts at a certain concentration. It declines continuously at 4% per day. After 7 days it has decreased to a concentration of 226mg/L.

Rearrange the exponential equation to solve for for the starting concentration given this scenario?

A $C_0 = \frac{226}{e^{(\frac{-0.04}{7})}}$

B $C_0 = \frac{226}{e^{(-0.04 \cdot 7)}}$

C $C_0 = \frac{e^{(-0.04 \cdot 7)}}{226}$