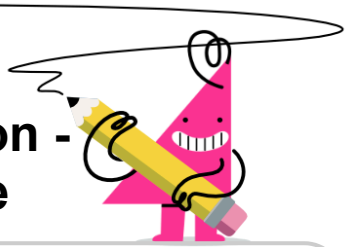
Name

Exponential Function Solution Equation - Decay (Continuous) - Scenario to Time



1

A bacteria population starts at 600. It declines continuously at 5% per month. After a certain number of months it has decreased to a population of 516 bacteria.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = -\frac{0.05}{\ln \frac{516}{600}}$

B $t = +\frac{\ln 516 \cdot 600}{0.05}$

C $t = -\frac{\ln \frac{516}{600}}{0.05}$

2

A whale population starts at 200. It declines continuously at 4% per quarter. After a certain number of quarters it has decreased to a population of 145 whales.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = +\frac{\ln 145 \cdot 200}{0.04}$

B $t = -\frac{0.04}{\ln \frac{145}{200}}$

C $t = -\frac{\ln \frac{145}{200}}{0.04}$

3

A radioactive material starts at an isotope concentration of 300ppm. It decays continuously at 6% per day. After a certain number of days it has decayed to an isotope concentration of 222ppm.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = -\frac{\ln \frac{222}{300}}{0.06}$

B $t = +\frac{\ln 222 \cdot 300}{0.06}$

4

A bacteria population starts at 500. It declines continuously at 2% per month. After a certain number of months it has decreased to a population of 417 bacteria.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = -\frac{0.02}{\ln \frac{417}{500}}$

B $t = -\frac{\ln \frac{417}{500}}{0.02}$

C $t = +\frac{\ln 417 \cdot 500}{0.02}$

5

A radioactive material starts at an isotope concentration of 500ppm. It decays continuously at 2% per hour. After a certain number of hours it has decayed to an isotope concentration of 470ppm.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = +\frac{\ln 470 \cdot 500}{0.02}$

B $t = -\frac{\ln \frac{470}{500}}{0.02}$

6

A bird population starts at 500. It declines continuously at 7% per year. After a certain number of years it has decreased to a population of 285.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = +\frac{\ln 285 \cdot 500}{0.07}$

B $t = -\frac{0.07}{\ln \frac{285}{500}}$

C $t = -\frac{\ln \frac{285}{500}}{0.07}$

7

A toxin starts at a concentration of 600mg/L. It declines continuously at 2% per month. After a certain number of months it has decreased to a concentration of 521mg/L.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = -\frac{0.02}{\ln \frac{521}{600}}$

B $t = -\frac{\ln \frac{521}{600}}{0.02}$

C $t = +\frac{\ln 521 \cdot 600}{0.02}$

8

A bird population starts at 700. It declines continuously at 3% per quarter. After a certain number of quarters it has decreased to a population of 620.

Rearrange the exponential equation to solve for for the time given this scenario?

A $t = +\frac{\ln 620 \cdot 700}{0.03}$

B $t = -\frac{\ln \frac{620}{700}}{0.03}$

C $t = -\frac{0.03}{\ln \frac{620}{700}}$