



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

1

A bird population starts at 600. It declines continuously at 3% per quarter. After a certain number of quarters it has decreased to a population of 532.

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

A	B
$t = -\frac{\ln \frac{532}{600}}{0.03}$	$t = -\frac{0.03}{\ln \frac{532}{600}}$

2

A bacteria population starts at 300. It declines continuously at 2% per day. After a certain number of days it has decreased to a population of 255 bacteria.

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

A	B
$t = +\frac{\ln 255 \cdot 300}{0.02}$	$t = -\frac{\ln \frac{255}{300}}{0.02}$
C	
$t = -\frac{0.02}{\ln \frac{255}{300}}$	

3

A bird population starts at 300. It declines continuously at 6% per quarter. After a certain number of quarters it has decreased to a population of 235.

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

A	B
$t = -\frac{0.06}{\ln \frac{235}{300}}$	$t = +\frac{\ln 235 \cdot 300}{0.06}$
C	
$t = -\frac{\ln \frac{235}{300}}{0.06}$	

4

A bird population starts at 700. It declines continuously at 4% per quarter. After a certain number of quarters it has decreased to a population of 573.

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

A	B
$t = -\frac{\ln \frac{573}{700}}{0.04}$	$t = -\frac{0.04}{\ln \frac{573}{700}}$

5

A bird population starts at 500. It declines continuously at 3% per year. After a certain number of years it has decreased to a population of 405.

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

A	B
$t = +\frac{\ln 405 \cdot 500}{0.03}$	$t = -\frac{\ln \frac{405}{500}}{0.03}$

6

A bird population starts at 300. It declines continuously at 7% per quarter. After a certain number of quarters it has decreased to a population of 260.

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

A	B
$t = -\frac{0.07}{\ln \frac{260}{300}}$	$t = -\frac{\ln \frac{260}{300}}{0.07}$

7

A bacteria population starts at 400. It declines continuously at 8% per day. After a certain number of days it has decreased to a population of 314 bacteria.

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

A	B
$t = +\frac{\ln 314 \cdot 400}{0.08}$	$t = -\frac{\ln \frac{314}{400}}{0.08}$

8

A toxin starts at a concentration of 500mg/L. It declines continuously at 8% per hour. After a certain number of hours it has decreased to a concentration of 243mg/L.

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

A	B
$t = +\frac{\ln 243 \cdot 500}{0.08}$	$t = -\frac{\ln \frac{243}{500}}{0.08}$