



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

1

A charitable endowment starts with \$300. Each monthly it disburses 5% of its remaining funds. After a certain number of months its funds have decreased to \$209.

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

A	B
$t = \frac{\ln \frac{209}{300}}{\ln(1 - 0.05)}$	$t = \frac{\ln \frac{209}{300}}{\ln(1 + 0.05)}$

2

A toxin starts at a concentration of 300mg/L. Each weekly dialysis reduces it by 6%. After a certain number of weeks it has decreased to a concentration of 182mg/L.

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

A	B
$t = \frac{\ln 182 \cdot 300}{\ln(1 - 0.06)}$	$t = \frac{\ln \frac{182}{300}}{\ln(1 - 0.06)}$

3

A toxin starts at a concentration of 400mg/L. Each daily dialysis reduces it by 5%. After a certain number of days it has decreased to a concentration of 279mg/L.

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

A	B
$t = \frac{\ln \frac{279}{400}}{\ln(1 - 0.05)}$	$t = \frac{\ln 279 \cdot 400}{\ln(1 - 0.05)}$

4

A bird population starts at 700. Each subsequent year it declines by 4%. After a certain number of years it has decreased to a population of 570.

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

A	B
$t = \frac{\ln \frac{570}{700}}{\ln(1 - 0.04)}$	$t = \frac{\ln 570 \cdot 700}{\ln(1 - 0.04)}$

5

A bird population starts at 900. Each subsequent year it declines by 7%. After a certain number of years it has decreased to a population of 503.

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

A	B
$t = \frac{\ln \frac{503}{900}}{\ln(1 + 0.07)}$	$t = \frac{\ln \frac{503}{900}}{\ln(1 - 0.07)}$

6

A toxin starts at a concentration of 400mg/L. Each monthly dialysis reduces it by 6%. After a certain number of months it has decreased to a concentration of 332mg/L.

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

A	B
$t = \frac{\ln \frac{332}{400}}{\ln(1 - 0.06)}$	$t = \frac{\ln 332 \cdot 400}{\ln(1 - 0.06)}$

7

A charitable endowment starts with \$800. Each daily it disburses 2% of its remaining funds. After a certain number of days its funds have decreased to \$752.

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

A	B
$t = \frac{\ln 752 \cdot 800}{\ln(1 - 0.02)}$	$t = \frac{\ln \frac{752}{800}}{\ln(1 - 0.02)}$
C	
$t = \frac{\ln \frac{752}{800}}{\ln(1 + 0.02)}$	

8

A bird population starts at 400. Each subsequent year it declines by 7%. After a certain number of years it has decreased to a population of 278.

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

A	B
$t = \frac{\ln \frac{278}{400}}{\ln(1 + 0.07)}$	$t = \frac{\ln \frac{278}{400}}{\ln(1 - 0.07)}$