



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

1

A credit card starts with \$600 of debt. Each subsequent year it grows by 5% in interest. After a certain number of years the debt has grown to \$661.

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

A	B
$t = \frac{\ln \frac{661}{600}}{\ln(1 + 0.05)}$	$t = \frac{\ln \frac{661}{600}}{\ln(1 - 0.05)}$

2

A rabbit population starts at 900. Each subsequent yearly breeding season it grows by 4%. After a certain number of years it has increased to a population of 973 rabbits.

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

A $t = \frac{\ln \frac{973}{900}}{\ln(1 + 0.04)}$	B $t = \frac{\ln \frac{973}{900}}{\ln(1 - 0.04)}$
C $t = \frac{\ln 973 \cdot 900}{\ln(1 + 0.04)}$	

3

A credit card starts with \$300 of debt. Each subsequent quarter it grows by 8% in interest. After a certain number of quarters the debt has grown to \$440.

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

A	B
$t = \frac{\ln \frac{440}{300}}{\ln(1 + 0.08)}$	$t = \frac{\ln \frac{440}{300}}{\ln(1 - 0.08)}$

4

A savings account starts with \$600. Each subsequent month it earns 3% in interest. After a certain number of months it has \$695.

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

A $t = \frac{\ln \frac{695}{600}}{\ln(1 + 0.03)}$	B $t = \frac{\ln \frac{695}{600}}{\ln(1 - 0.03)}$
C $t = \frac{\ln 695 \cdot 600}{\ln(1 + 0.03)}$	

5

A credit card starts with \$500 of debt. Each subsequent year it grows by 3% in interest. After a certain number of years the debt has grown to \$530.

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

A	B
$t = \frac{\ln \frac{530}{500}}{\ln(1 + 0.03)}$	$t = \frac{\ln 530 \cdot 500}{\ln(1 + 0.03)}$

6

A savings account starts with \$500. Each subsequent quarter it earns 6% in interest. After a certain number of quarters it has \$844.

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

A $t = \frac{\ln 844 \cdot 500}{\ln(1 + 0.06)}$	B $t = \frac{\ln \frac{844}{500}}{\ln(1 - 0.06)}$
C $t = \frac{\ln \frac{844}{500}}{\ln(1 + 0.06)}$	

7

A credit card starts with \$500 of debt. Each subsequent quarter it grows by 2% in interest. After a certain number of quarters the debt has grown to \$541.

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

A	B
$t = \frac{\ln \frac{541}{500}}{\ln(1 + 0.02)}$	$t = \frac{\ln 541 \cdot 500}{\ln(1 + 0.02)}$

8

An insect population starts at 500. Each subsequent yearly breeding season it grows by 2%. After a certain number of years it has increased to a population of 530.

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

A $t = \frac{\ln \frac{530}{500}}{\ln(1 - 0.02)}$	B $t = \frac{\ln 530 \cdot 500}{\ln(1 + 0.02)}$
C $t = \frac{\ln \frac{530}{500}}{\ln(1 + 0.02)}$	