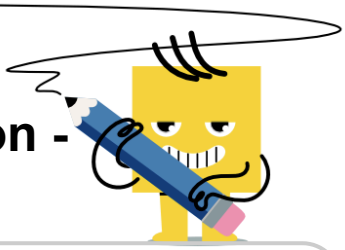
Name



Exponential Function Solution Equation - Growth (Discrete, Mis-matched Time Units) Scenario to Time

1

A credit card starts with $400 of debt. Each subsequent quarter it grows by 3% in interest. After a certain number of years the debt has grown to $477.

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

A $t = 4 \cdot \frac{\ln \frac{477}{400}}{\ln(1+0.03)}$

B $t = \frac{1}{4} \cdot \frac{\ln 477 \cdot 400}{\ln(1+0.03)}$

C $t = \frac{1}{4} \cdot \frac{\ln \frac{477}{400}}{\ln(1+0.03)}$

2

A credit card starts with $600 of debt. Each subsequent quarter it grows by 7% in interest. After a certain number of years the debt has grown to $1,103.

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

A $t = \frac{1}{4} \cdot \frac{\ln 1103 \cdot 600}{\ln(1+0.07)}$

B $t = 4 \cdot \frac{\ln \frac{1103}{600}}{\ln(1-0.07)}$

C $t = \frac{1}{4} \cdot \frac{\ln \frac{1103}{600}}{\ln(1+0.07)}$

3

A savings account starts with $600. Each subsequent quarter it earns 8% in interest. After a certain number of months it has $1,510.

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

A $t = 3 \cdot \frac{\ln 1510 \cdot 600}{\ln(1+0.08)}$

B $t = \frac{1}{3} \cdot \frac{\ln \frac{1510}{600}}{\ln(1-0.08)}$

C $t = 3 \cdot \frac{\ln \frac{1510}{600}}{\ln(1+0.08)}$

4

A savings account starts with $900. Each subsequent year it earns 4% in interest. After a certain number of months it has $38,854.

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

A $t = \frac{1}{12} \cdot \frac{\ln \frac{38854}{900}}{\ln(1-0.04)}$

B $t = 12 \cdot \frac{\ln \frac{38854}{900}}{\ln(1+0.04)}$

5

A savings account starts with $700. Each subsequent year it earns 4% in interest. After a certain number of months it has $1,794.

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

A $t = 12 \cdot \frac{\ln 1794 \cdot 700}{\ln(1+0.04)}$

B $t = 12 \cdot \frac{\ln \frac{1794}{700}}{\ln(1+0.04)}$

C $t = \frac{1}{12} \cdot \frac{\ln \frac{1794}{700}}{\ln(1+0.04)}$

D $t = \frac{1}{12} \cdot \frac{\ln \frac{1794}{700}}{\ln(1-0.04)}$

6

A credit card starts with $800 of debt. Each subsequent month it grows by 4% in interest. After a certain number of years the debt has grown to $865.

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

A $t = 12 \cdot \frac{\ln \frac{865}{800}}{\ln(1-0.04)}$

B $t = 12 \cdot \frac{\ln \frac{865}{800}}{\ln(1+0.04)}$

C $t = \frac{1}{12} \cdot \frac{\ln \frac{865}{800}}{\ln(1+0.04)}$

7

A credit card starts with $800 of debt. Each subsequent year it grows by 9% in interest. After a certain number of quarters the debt has grown to $4,483.

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

A $t = 4 \cdot \frac{\ln 4483 \cdot 800}{\ln(1+0.09)}$

B $t = \frac{1}{4} \cdot \frac{\ln \frac{4483}{800}}{\ln(1-0.09)}$

C $t = 4 \cdot \frac{\ln \frac{4483}{800}}{\ln(1+0.09)}$

D $t = \frac{1}{4} \cdot \frac{\ln \frac{4483}{800}}{\ln(1+0.09)}$

8

A savings account starts with $600. Each subsequent year it earns 7% in interest. After a certain number of months it has $34,767.

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

A $t = 12 \cdot \frac{\ln \frac{34767}{600}}{\ln(1+0.07)}$

B $t = \frac{1}{12} \cdot \frac{\ln \frac{34767}{600}}{\ln(1+0.07)}$