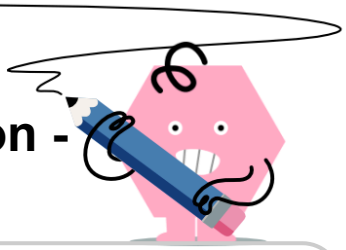
Name



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

1 Rearrange this equation to solve for the time given this model of a growth in credit card debt with quarterly interest?

$$885 = 700 \cdot (1 + 0.04)^{(t \cdot 4)}$$

A	$t = 4 \cdot \frac{\ln \frac{885}{700}}{\ln(1 + 0.04)}$	B	$t = \frac{1}{4} \cdot \frac{\ln 885 \cdot 700}{\ln(1 + 0.04)}$
C	$t = \frac{1}{4} \cdot \frac{\ln \frac{885}{700}}{\ln(1 + 0.04)}$		

2 Rearrange this equation to solve for the time given this model of a growth in credit card debt with quarterly interest?

$$317 = 200 \cdot (1 + 0.08)^{(t \cdot 4)}$$

A	$t = \frac{1}{4} \cdot \frac{\ln \frac{317}{200}}{\ln(1 + 0.08)}$	B	$t = 4 \cdot \frac{\ln \frac{317}{200}}{\ln(1 - 0.08)}$
C	$t = 4 \cdot \frac{\ln \frac{317}{200}}{\ln(1 + 0.08)}$	D	$t = \frac{1}{4} \cdot \frac{\ln 317 \cdot 200}{\ln(1 + 0.08)}$

3 Rearrange this equation to solve for the time given this model of a growth in credit card debt with quarterly interest?

$$835 = 300 \cdot (1 + 0.05)^{(\frac{t}{3})}$$

A	$t = \frac{1}{3} \cdot \frac{\ln \frac{835}{300}}{\ln(1 - 0.05)}$	B	$t = 3 \cdot \frac{\ln 835 \cdot 300}{\ln(1 + 0.05)}$
C	$t = 3 \cdot \frac{\ln \frac{835}{300}}{\ln(1 + 0.05)}$		

4 Rearrange this equation to solve for the time given this model of a quarterly compounding growth of money in a savings account?

$$530 = 500 \cdot (1 + 0.03)^{(t \cdot 4)}$$

A	$t = 4 \cdot \frac{\ln \frac{530}{500}}{\ln(1 + 0.03)}$	B	$t = \frac{1}{4} \cdot \frac{\ln 530 \cdot 500}{\ln(1 + 0.03)}$
C	$t = 4 \cdot \frac{\ln \frac{530}{500}}{\ln(1 - 0.03)}$	D	$t = \frac{1}{4} \cdot \frac{\ln \frac{530}{500}}{\ln(1 + 0.03)}$

5 Rearrange this equation to solve for the time given this model of a yearly compounding growth of money in a savings account?

$$1,905 = 400 \cdot (1 + 0.05)^{(\frac{t}{4})}$$

A	$t = 4 \cdot \frac{\ln \frac{1905}{400}}{\ln(1 + 0.05)}$	B	$t = \frac{1}{4} \cdot \frac{\ln \frac{1905}{400}}{\ln(1 - 0.05)}$
C	$t = \frac{1}{4} \cdot \frac{\ln \frac{1905}{400}}{\ln(1 + 0.05)}$		

6 Rearrange this equation to solve for the time given this model of a growth in credit card debt with monthly interest?

$$797 = 400 \cdot (1 + 0.09)^{(t \cdot 3)}$$

A	$t = \frac{1}{3} \cdot \frac{\ln \frac{797}{400}}{\ln(1 + 0.09)}$	B	$t = \frac{1}{3} \cdot \frac{\ln 797 \cdot 400}{\ln(1 + 0.09)}$
C	$t = 3 \cdot \frac{\ln \frac{797}{400}}{\ln(1 + 0.09)}$	D	$t = 3 \cdot \frac{\ln \frac{797}{400}}{\ln(1 - 0.09)}$

7 Rearrange this equation to solve for the time given this model of a growth in credit card debt with yearly interest?

$$1,802 = 700 \cdot (1 + 0.03)^{(\frac{t}{4})}$$

A	$t = 4 \cdot \frac{\ln \frac{1802}{700}}{\ln(1 + 0.03)}$	B	$t = \frac{1}{4} \cdot \frac{\ln \frac{1802}{700}}{\ln(1 + 0.03)}$
C	$t = 4 \cdot \frac{\ln 1802 \cdot 700}{\ln(1 + 0.03)}$	D	$t = \frac{1}{4} \cdot \frac{\ln \frac{1802}{700}}{\ln(1 - 0.03)}$

8 Rearrange this equation to solve for the time given this model of a quarterly compounding growth of money in a savings account?

$$1,521 = 300 \cdot (1 + 0.07)^{(\frac{t}{3})}$$

A	$t = \frac{1}{3} \cdot \frac{\ln \frac{1521}{300}}{\ln(1 - 0.07)}$	B	$t = 3 \cdot \frac{\ln 1521 \cdot 300}{\ln(1 + 0.07)}$
C	$t = 3 \cdot \frac{\ln \frac{1521}{300}}{\ln(1 + 0.07)}$	D	$t = \frac{1}{3} \cdot \frac{\ln \frac{1521}{300}}{\ln(1 + 0.07)}$