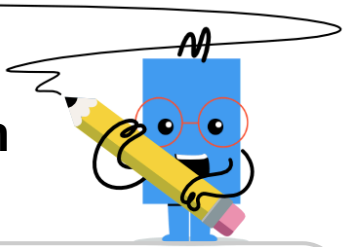
Name

Exponential Function Solving - Growth (Discrete) - Equation to Time



1 Solve for the time given this model of a growth of a rabbit population (yearly breeding cycle)?

$$1,074 = 900 \cdot (1 + 0.03)^{(t)}$$

A	$1 + t = \frac{\ln P \cdot P_0}{\ln (1 + r)}$	B	$t = \frac{\ln \frac{P}{P_0}}{\ln (1 + r)}$
C	$4 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$	D	$4 + t = \frac{\ln P \cdot P_0}{\ln (1 + r)}$

2 Solve for the time given this model of a growth of an insect population that breeds once per year?

$$789 = 600 \cdot (1 + 0.04)^{(t)}$$

A	$t = \frac{\ln \frac{P}{P_0}}{\ln (1 + r)}$	B	$7 + t = \frac{\ln P \cdot P_0}{\ln (1 + r)}$
C	$9 + t = \frac{\ln P \cdot P_0}{\ln (1 + r)}$	D	$5 + t = \frac{\ln P \cdot P_0}{\ln (1 + r)}$

3 Solve for the time given this model of a growth of a rabbit population (yearly breeding cycle)?

$$735 = 600 \cdot (1 + 0.07)^{(t)}$$

A	$t = \frac{\ln \frac{P}{P_0}}{\ln (1 + r)}$	B	$9 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$
C	$5 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$	D	$9 + t = \frac{\ln P \cdot P_0}{\ln (1 + r)}$

4 Solve for the time given this model of a growth in credit card debt with quarterly interest?

$$1,070 = 800 \cdot (1 + 0.06)^{(t)}$$

A	$3 + t = \frac{\ln \frac{D}{D_0}}{\ln (1 - r)}$	B	$t = \frac{\ln \frac{D}{D_0}}{\ln (1 + r)}$
C	$3 + t = \frac{\ln D \cdot D_0}{\ln (1 + r)}$	D	$4 + t = \frac{\ln \frac{D}{D_0}}{\ln (1 - r)}$

5 Solve for the time given this model of a monthly compounding growth of money in a savings account?

$$684 = 500 \cdot (1 + 0.04)^{(t)}$$

A	$6 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$	B	$5 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$
C	$t = \frac{\ln \frac{P}{P_0}}{\ln (1 + r)}$	D	$8 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$

6 Solve for the time given this model of a quarterly compounding growth of money in a savings account?

$$848 = 800 \cdot (1 + 0.03)^{(t)}$$

A	$t = \frac{\ln \frac{P}{P_0}}{\ln (1 + r)}$	B	$6 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$
C	$3 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$	D	$8 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$

7 Solve for the time given this model of a growth in credit card debt with yearly interest?

$$735 = 400 \cdot (1 + 0.07)^{(t)}$$

A	$4 + t = \frac{\ln \frac{D}{D_0}}{\ln (1 - r)}$	B	$t = \frac{\ln \frac{D}{D_0}}{\ln (1 + r)}$
C	$9 + t = \frac{\ln D \cdot D_0}{\ln (1 + r)}$	D	$8 + t = \frac{\ln \frac{D}{D_0}}{\ln (1 - r)}$

8 Solve for the time given this model of a monthly compounding growth of money in a savings account?

$$865 = 800 \cdot (1 + 0.04)^{(t)}$$

A	$3 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$	B	$t = \frac{\ln \frac{P}{P_0}}{\ln (1 + r)}$
C	$8 + t = \frac{\ln \frac{P}{P_0}}{\ln (1 - r)}$		