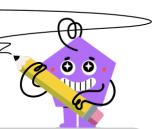# Exponential Function Solving - Growth (Continuous) - Scenario to Time

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1

A savings account starts with $300. It grows continuously at 5% interest per month. After a certain number of months it has $404.

Solve for the time given this scenario?

A $t = +\dfrac{\ln \frac{P}{P_0}}{r}$	B $4 + t = +\dfrac{r}{\ln \frac{P}{P_0}}$
C $0 + t = +\dfrac{r}{\ln \frac{P}{P_0}}$	D $1 + t = +\dfrac{r}{\ln \frac{P}{P_0}}$

2

A rabbit population starts at 500. It grows continuously at 6% growth per quarter. After a certain number of quarters it has increased to a population of 858 rabbits.

Solve for the time given this scenario?

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

3

An app starts with 200 downloads. Its download count grows continually by 7% each week. After a certain number of weeks it has 246 downloads.

Solve for the time given this scenario?

A $t = +\dfrac{\ln \frac{A}{A_0}}{r}$	B $4 + t = +\dfrac{\ln A \cdot A_0}{r}$
C $2 + t = +\dfrac{r}{\ln \frac{A}{A_0}}$	D $5 + t = +\dfrac{\ln A \cdot A_0}{r}$

4

A bacteria population starts at 600. It grows continuously at 4% growth per year. After a certain number of years it has increased to a population of 793.

Solve for the time given this scenario?

A $8 + t = +\dfrac{r}{\ln \frac{P}{P_0}}$	B $t = +\dfrac{\ln \frac{P}{P_0}}{r}$
C $7 + t = +\dfrac{\ln P \cdot P_0}{r}$	D $3 + t = +\dfrac{\ln P \cdot P_0}{r}$

5

A credit card starts with $400 of debt. It grows continuously at 6% interest per year. After a certain number of years the debt has grown to $478.

Solve for the time given this scenario?

A $9 + t = +\dfrac{r}{\ln \frac{D}{D_0}}$	B $6 + t = +\dfrac{r}{\ln \frac{D}{D_0}}$
C $t = +\dfrac{\ln \frac{D}{D_0}}{r}$	

6

A savings account starts with $200. It grows continuously at 6% interest per year. After a certain number of years it has $269.

Solve for the time given this scenario?

A $6 + t = +\dfrac{\ln P \cdot P_0}{r}$	B $t = +\dfrac{\ln \frac{P}{P_0}}{r}$
C $1 + t = +\dfrac{r}{\ln \frac{P}{P_0}}$	

7

A savings account starts with $600. It grows continuously at 8% interest per year. After a certain number of years it has $1,232.

Solve for the time given this scenario?

A $2 + t = +\dfrac{r}{\ln \frac{P}{P_0}}$	B $9 + t = +\dfrac{\ln P \cdot P_0}{r}$
C $t = +\dfrac{\ln \frac{P}{P_0}}{r}$	D $0 + t = +\dfrac{\ln P \cdot P_0}{r}$

8

A company's share price starts at $600. It grows continuously at 3% growth per quarter. After a certain number of quarters it has a share price of $697.

Solve for the time given this scenario?

A $1 + t = +\dfrac{\ln S \cdot S_0}{r}$	B $t = +\dfrac{\ln \frac{S}{S_0}}{r}$
C $0 + t = +\dfrac{r}{\ln \frac{S}{S_0}}$	D $8 + t = +\dfrac{\ln S \cdot S_0}{r}$