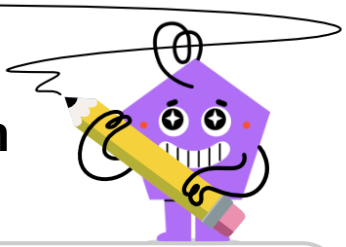
Name



Exponential Function Solving - Growth (Continuous, Mis-matched Time Units) Scenario to Rate

1

An insect population starts at 500. It grows continuously at a certain percent growth per year. After 4 days it has increased to a population of 688.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{e^{\frac{P}{P_0}}}{\frac{t}{365}}$	$r = +\frac{\ln \frac{P}{P_0}}{\frac{t}{365}}$

2

A savings account starts with $500. It grows continuously at a certain percent interest per quarter. After 9 months it has $716.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{e^{\frac{P}{P_0}}}{\frac{t}{3}}$	$r = +\frac{\ln \frac{P}{P_0}}{\frac{t}{3}}$

3

An insect population starts at 400. It grows continuously at a certain percent growth per week. After 7 days it has increased to a population of 608.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{\ln \frac{P}{P_0}}{\frac{t}{7}}$	$r = +\frac{e^{\frac{P}{P_0}}}{\frac{t}{7}}$
C	
$r = +\frac{\ln \frac{P_0}{P}}{t \cdot 7}$	

4

A rabbit population starts at 700. It grows continuously at a certain percent growth per year. After 2 quarters it has increased to a population of 758 rabbits.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{\ln \frac{P}{P_0}}{\frac{t}{4}}$	$r = +\frac{\ln \frac{P_0}{P}}{t \cdot 4}$
C	
$r = +\frac{e^{\frac{P}{P_0}}}{\frac{t}{4}}$	

5

An app starts with 800 downloads. Its download count grows continually by a certain percent each week. After 7 days it has 1,135 downloads.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{\ln \frac{A}{A_0}}{\frac{t}{7}}$	$r = +\frac{e^{\frac{A}{A_0}}}{\frac{t}{7}}$
C	
$r = +\frac{\ln \frac{A_0}{A}}{t \cdot 7}$	

6

A savings account starts with $900. It grows continuously at a certain percent interest per year. After 4 months it has $974.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{e^{\frac{P}{P_0}}}{\frac{t}{12}}$	$r = +\frac{\ln \frac{P}{P_0}}{\frac{t}{12}}$
C	
$r = +\frac{\ln \frac{P_0}{P}}{t \cdot 12}$	

7

A savings account starts with $400. It grows continuously at a certain percent interest per year. After 9 months it has $478.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{\ln \frac{P}{P_0}}{\frac{t}{12}}$	$r = +\frac{e^{\frac{P}{P_0}}}{\frac{t}{12}}$
C	
$r = +\frac{\ln \frac{P_0}{P}}{t \cdot 12}$	

8

A company's share price starts at $200. It grows continuously at a certain percent growth per quarter. After 8 months it has a share price of $254.

How would you solve for the rate given this scenario?

A	B
$r = +\frac{\ln \frac{S}{S_0}}{\frac{t}{3}}$	$r = +\frac{e^{\frac{S}{S_0}}}{\frac{t}{3}}$
C	
$r = +\frac{\ln \frac{S_0}{S}}{t \cdot 3}$	