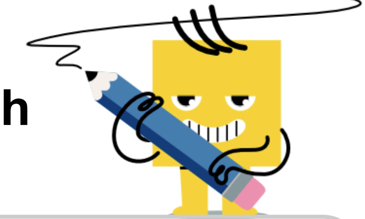
Name ____________________



Exponential Function Solving - Growth (Discrete) Scenario to Time

1

A rabbit population starts at 300. Each subsequent yearly breeding season it grows by 9%. After a certain number of years it has increased to a population of 548 rabbits.

How would you solve for the time given this scenario?

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

2

An insect population starts at 200. Each subsequent yearly breeding season it grows by 5%. After a certain number of years it has increased to a population of 281.

How would you solve for the time given this scenario?

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

3

A credit card starts with $400 of debt. Each subsequent year it grows by 2% in interest. After a certain number of years the debt has grown to $478.

How would you solve for the time given this scenario?

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

4

A credit card starts with $400 of debt. Each subsequent year it grows by 7% in interest. After a certain number of years the debt has grown to $561.

How would you solve for the time given this scenario?

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

5

A credit card starts with $900 of debt. Each subsequent quarter it grows by 4% in interest. After a certain number of quarters the debt has grown to $1,094.

How would you solve for the time given this scenario?

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

6

A credit card starts with $300 of debt. Each subsequent quarter it grows by 8% in interest. After a certain number of quarters the debt has grown to $599.

How would you solve for the time given this scenario?

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

7

An insect population starts at 200. Each subsequent yearly breeding season it grows by 6%. After a certain number of years it has increased to a population of 238.

How would you solve for the time given this scenario?

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

8

A rabbit population starts at 600. Each subsequent yearly breeding season it grows by 9%. After a certain number of years it has increased to a population of 777 rabbits.

How would you solve for the time given this scenario?

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