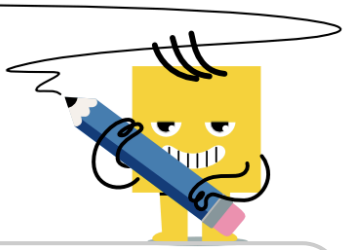
Name



# Exponential Function Solving - Decay (Discrete, Mis-matched Time Units) - Scenario to Time

**1**

A charitable endowment starts with $600. Each weekly it disburses 9% of its remaining funds. After a certain number of days its funds have decreased to $82.

How would you solve for the time given this scenario?

A $t = \frac{1}{7} \cdot \frac{\ln \frac{P}{P_0}}{\ln(1+r)}$

B $t = 7 \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

C $t = 7 \cdot \frac{\ln P \cdot P_0}{\ln(1-r)}$

**2**

A charitable endowment starts with $600. Each yearly it disburses 8% of its remaining funds. After a certain number of months its funds have decreased to $0.

How would you solve for the time given this scenario?

A $t = \frac{1}{12} \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

B $t = 12 \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

**3**

A charitable endowment starts with $700. Each yearly it disburses 9% of its remaining funds. After a certain number of days its funds have decreased to $0.

How would you solve for the time given this scenario?

A $t = 365 \cdot \frac{\ln P \cdot P_0}{\ln(1-r)}$

B $t = \frac{1}{365} \cdot \frac{\ln \frac{P}{P_0}}{\ln(1+r)}$

C $t = \frac{1}{365} \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

D $t = 365 \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

**4**

A toxin starts at a concentration of 900mg/L. Each daily dialysis reduces it by 4%. After a certain number of hours it has decreased to a concentration of 47mg/L.

How would you solve for the time given this scenario?

A $t = 24 \cdot \frac{\ln \frac{C}{C_0}}{\ln(1-r)}$

B $t = \frac{1}{24} \cdot \frac{\ln \frac{C}{C_0}}{\ln(1-r)}$

C $t = \frac{1}{24} \cdot \frac{\ln \frac{C}{C_0}}{\ln(1+r)}$

**5**

A charitable endowment starts with $300. Each monthly it disburses 7% of its remaining funds. After a certain number of years its funds have decreased to $224.

How would you solve for the time given this scenario?

A $t = \frac{1}{12} \cdot \frac{\ln P \cdot P_0}{\ln(1-r)}$

B $t = 12 \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

C $t = \frac{1}{12} \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

**6**

A charitable endowment starts with $200. Each yearly it disburses 8% of its remaining funds. After a certain number of days its funds have decreased to $0.

How would you solve for the time given this scenario?

A $t = 365 \cdot \frac{\ln P \cdot P_0}{\ln(1-r)}$

B $t = 365 \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

**7**

A charitable endowment starts with $600. Each daily it disburses 2% of its remaining funds. After a certain number of weeks its funds have decreased to $553.

How would you solve for the time given this scenario?

A $t = \frac{1}{7} \cdot \frac{\ln \frac{P}{P_0}}{\ln(1-r)}$

B $t = 7 \cdot \frac{\ln \frac{P}{P_0}}{\ln(1+r)}$

**8**

A toxin starts at a concentration of 600mg/L. Each daily dialysis reduces it by 4%. After a certain number of hours it has decreased to a concentration of 31mg/L.

How would you solve for the time given this scenario?

A $t = 24 \cdot \frac{\ln \frac{C}{C_0}}{\ln(1-r)}$

B $t = 24 \cdot \frac{\ln C \cdot C_0}{\ln(1-r)}$

C $t = \frac{1}{24} \cdot \frac{\ln \frac{C}{C_0}}{\ln(1+r)}$