Name

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

1

A toxin starts at a concentration of 300mg/L. Each hourly dialysis reduces it by a certain percent. After 5 days it has decreased to a concentration of 187mg/L.

How would you solve for the rate given this scenario?

A $r=-(\frac{C}{C_0})^{\frac{t\cdot 24}{2}}-1$

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

2

A charitable endowment starts with $400. Each daily it disburses a certain percent of its remaining funds. After 2 years its funds have decreased to $361.

How would you solve for the rate given this scenario?

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

B $r=-(\frac{P}{P_0})^{\frac{t\cdot 365}{2}}-1$

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

3

A toxin starts at a concentration of 400mg/L. Each weekly dialysis reduces it by a certain percent. After 14 days it has decreased to a concentration of 144mg/L.

How would you solve for the rate given this scenario?

A $r=-(\frac{C}{C_0})^{\frac{1}{\frac{t}{7}}}-1$

B $r=-(\frac{C}{C_0})^{\frac{1}{t\cdot 7}}+1$

C $r=-(\frac{C}{C_0})^{\frac{t}{2}}-1$

4

A toxin starts at a concentration of 500mg/L. Each daily dialysis reduces it by a certain percent. After 9 weeks it has decreased to a concentration of 346mg/L.

How would you solve for the rate given this scenario?

A $r=-(\frac{C}{C_0})^{\frac{t\cdot 7}{2}}-1$

B $r=-(\frac{C}{C_0})^{\frac{1}{\frac{t}{7}}}+1$

C $r=-(\frac{C}{C_0})^{\frac{1}{t\cdot 7}}-1$

5

A charitable endowment starts with $800. Each yearly it disburses a certain percent of its remaining funds. After 1095 days its funds have decreased to $0.

How would you solve for the rate given this scenario?

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

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

C $r=-(\frac{P}{P_0})^{\frac{t}{\frac{365}{2}}}-1$

6

A charitable endowment starts with $300. Each daily it disburses a certain percent of its remaining funds. After 6 years its funds have decreased to $220.

How would you solve for the rate given this scenario?

A $r=-(\frac{P}{P_0})^{\frac{t\cdot 365}{2}}-1$

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

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

7

A toxin starts at a concentration of 600mg/L. Each weekly dialysis reduces it by a certain percent. After 14 days it has decreased to a concentration of 186mg/L.

How would you solve for the rate given this scenario?

A $r=-(\frac{C}{C_0})^{\frac{1}{t\cdot 7}}+1$

B $r=-(\frac{C}{C_0})^{\frac{1}{\frac{t}{7}}}-1$

C $r=-(\frac{C}{C_0})^{\frac{t}{2}}-1$

8

A charitable endowment starts with $800. Each weekly it disburses a certain percent of its remaining funds. After 14 days its funds have decreased to $289.

How would you solve for the rate given this scenario?

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

B $r=-(\frac{P}{P_0})^{\frac{t}{\frac{7}{2}}}-1$

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