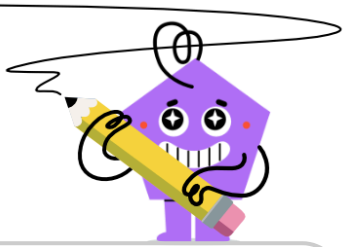
Name

Exponential Function Solving - Decay (Discrete) Scenario to Starting Value



1

A toxin starts at a certain concentration. Each monthly dialysis reduces it by 8%. After 4 months it has decreased to a concentration of 214mg/L.

Solve for the starting concentration given this scenario?

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

B $2 + C_0 = C \cdot (1-r)^t$

C $4 + C_0 = \frac{C}{(1+r)^t}$

D $9 + C_0 = C \cdot (1-r)^t$

2

A charitable endowment starts with a certain amount of money. Each monthly it disburses 2% of its remaining funds. After 6 months its funds have decreased to $442.

Solve for the starting cash given this scenario?

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

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

C $2 + P_0 = P \cdot (1-r)^t$

D $9 + P_0 = P \cdot (1-r)^t$

3

A bird population starts at a certain size. Each subsequent year it declines by 2%. After 3 years it has decreased to a population of 376.

Solve for the starting population given this scenario?

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

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

C $0 + P_0 = \frac{P}{(1+r)^t}$

D $5 + P_0 = \frac{P}{(1+r)^t}$

4

A whale population starts at a certain size. Each subsequent year it declines by 7%. After 6 years it has decreased to a population of 129 whales.

Solve for the starting population given this scenario?

A $3 + P_0 = P \cdot (1-r)^t$

B $8 + P_0 = P \cdot (1-r)^t$

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

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

5

A whale population starts at a certain size. Each subsequent year it declines by 6%. After 2 years it has decreased to a population of 441 whales.

Solve for the starting population given this scenario?

A $4 + P_0 = \frac{P}{(1+r)^t}$

B $9 + P_0 = \frac{P}{(1+r)^t}$

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

6

A whale population starts at a certain size. Each subsequent year it declines by 9%. After 5 years it has decreased to a population of 187 whales.

Solve for the starting population given this scenario?

A $4 + P_0 = P \cdot (1-r)^t$

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

C $8 + P_0 = P \cdot (1-r)^t$

D $9 + P_0 = \frac{P}{(1+r)^t}$

7

A toxin starts at a certain concentration. Each hourly dialysis reduces it by 8%. After 3 hours it has decreased to a concentration of 155mg/L.

Solve for the starting concentration given this scenario?

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

B $9 + C_0 = \frac{C}{(1+r)^t}$

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

D $7 + C_0 = C \cdot (1-r)^t$

8

A bird population starts at a certain size. Each subsequent year it declines by 8%. After 7 years it has decreased to a population of 278.

Solve for the starting population given this scenario?

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

B $4 + P_0 = \frac{P}{(1+r)^t}$

C $9 + P_0 = \frac{P}{(1+r)^t}$