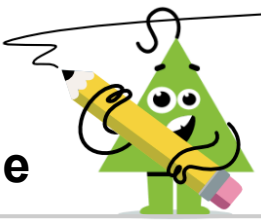
Name

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



1

A whale population starts at a certain size. It declines continuously at 4% per quarter. After 9 quarters it has decreased to a population of 418 whales.

Solve for the starting population given this scenario?

A $9 + P_0 = \frac{e^{(-r \cdot t)}}{P}$

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

C $6 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

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

2

A bird population starts at a certain size. It declines continuously at 8% per quarter. After 5 quarters it has decreased to a population of 201.

Solve for the starting population given this scenario?

A $3 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

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

C $8 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

3

A bacteria population starts at a certain size. It declines continuously at 4% per day. After 6 days it has decreased to a population of 157 bacteria.

Solve for the starting population given this scenario?

A $3 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

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

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

D $6 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

4

A whale population starts at a certain size. It declines continuously at 8% per quarter. After 7 quarters it has decreased to a population of 228 whales.

Solve for the starting population given this scenario?

A $8 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

B $8 + P_0 = \frac{e^{(-r \cdot t)}}{P}$

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

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

5

A whale population starts at a certain size. It declines continuously at 8% per quarter. After 9 quarters it has decreased to a population of 194 whales.

Solve for the starting population given this scenario?

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

B $8 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

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

D $6 + P_0 = \frac{P}{e^{(\frac{-r}{t})}}$

6

A toxin starts at a certain concentration. It declines continuously at 6% per day. After 3 days it has decreased to a concentration of 751mg/L.

Solve for the starting concentration given this scenario?

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

B $8 + C_0 = \frac{e^{(-r \cdot t)}}{C}$

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

7

A whale population starts at a certain size. It declines continuously at 4% per year. After 7 years it has decreased to a population of 604 whales.

Solve for the starting population given this scenario?

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

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

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

D $3 + P_0 = \frac{e^{(-r \cdot t)}}{P}$

8

A bird population starts at a certain size. It declines continuously at 9% per quarter. After 7 quarters it has decreased to a population of 213.

Solve for the starting population given this scenario?

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

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

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

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