Name

mobius

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

1

A bacteria population starts at a certain size. It declines continuously at 5% per day. After 6 days it has decreased to a population of 666 bacteria.

How would you solve for the starting population given this scenario?

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

2

A radioactive material starts at a certain isotope concentration. It decays continuously at 6% per week. After 2 weeks it has decayed to an isotope concentration of 443ppm.

How would you solve for the starting concentration given this scenario?

A	B
$R_0 = \frac{R}{e^{(-r \cdot t)}}$	$R_0 = \frac{R}{e^{(\frac{-r}{t})}}$

3

A whale population starts at a certain size. It declines continuously at 3% per year. After 8 years it has decreased to a population of 157 whales.

How would you solve for the starting population given this scenario?

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

4

A radioactive material starts at a certain isotope concentration. It decays continuously at 5% per day. After 9 days it has decayed to an isotope concentration of 127ppm.

How would you solve for the starting concentration given this scenario?

A	B
$R_0 = \frac{R}{e^{(-r \cdot t)}}$	$R_0 = \frac{e^{(-r \cdot t)}}{R}$

5

A bird population starts at a certain size. It declines continuously at 7% per year. After 4 years it has decreased to a population of 151.

How would you solve for the starting population given this scenario?

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

6

A toxin starts at a certain concentration. It declines continuously at 4% per month. After 8 months it has decreased to a concentration of 363mg/L.

How would you solve for the starting concentration given this scenario?

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

7

A toxin starts at a certain concentration. It declines continuously at 6% per hour. After 3 hours it has decreased to a concentration of 417mg/L.

How would you solve for the starting concentration given this scenario?

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

8

A bacteria population starts at a certain size. It declines continuously at 9% per day. After 6 days it has decreased to a population of 174 bacteria.

How would you solve for the starting population given this scenario?

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