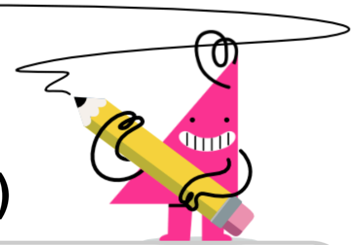
Name ______________________



mobius

Exponential Function Solving - Decay (Continuous, Mis-matched Time Units) Equation to Starting Value

1 Solve for the starting population given this model of a continuous decline of a bird population?

$$521 = P_0 \cdot e^{\left(-0.07 \cdot \frac{2}{4}\right)}$$

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

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

2 Solve for the starting population given this model of a a continuously declining bacteria population?

$$766 = P_0 \cdot e^{(-0.08 \cdot 2 \cdot 365)}$$

A $P_0 = \frac{P}{e^{\left(\frac{-r}{\frac{t}{365}}\right)}}$

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

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

3 Solve for the starting population given this model of a continuous decline of a bird population?

$$668 = P_0 \cdot e^{(-0.06 \cdot 3 \cdot 4)}$$

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

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

4 Solve for the starting concentration given this model of a continuous decay of a radioactive material?

$$491 = R_0 \cdot e^{\left(-0.04 \cdot \frac{5}{7}\right)}$$

A $R_0 = \frac{R}{e^{\left(-r \cdot \frac{t}{7}\right)}}$

B $R_0 = \frac{e^{\left(-r \cdot \frac{t}{7}\right)}}{R}$

C $R_0 = \frac{R}{e^{\left(\frac{-r}{t \cdot 7}\right)}}$

5 Solve for the starting population given this model of a continuous decline of a whale population?

$$361 = P_0 \cdot e^{(-0.05 \cdot 2 \cdot 4)}$$

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

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

6 Solve for the starting population given this model of a continuous decline of a whale population?

$$319 = P_0 \cdot e^{(-0.07 \cdot 9 \cdot 4)}$$

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

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

7 Solve for the starting concentration given this model of a continuous decay of a radioactive material?

$$285 = R_0 \cdot e^{(-0.08 \cdot 7 \cdot 24)}$$

A $R_0 = \frac{e^{(-r \cdot t \cdot 24)}}{R}$

B $R_0 = \frac{R}{e^{(-r \cdot t \cdot 24)}}$

C $R_0 = \frac{R}{e^{\left(\frac{-r}{\frac{t}{24}}\right)}}$

8 Solve for the starting concentration given this model of a continuous decay of a radioactive material?

$$620 = R_0 \cdot e^{\left(-0.02 \cdot \frac{6}{24}\right)}$$

A $R_0 = \frac{e^{\left(-r \cdot \frac{t}{24}\right)}}{R}$

B $R_0 = \frac{R}{e^{\left(-r \cdot \frac{t}{24}\right)}}$

C $R_0 = \frac{R}{e^{\left(\frac{-r}{t \cdot 24}\right)}}$