Name ______________

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

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

$$134 = P_0 \cdot e^{(-0.05 \cdot 8)}$$

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

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

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

$$262 = P_0 \cdot e^{(-0.07 \cdot 6)}$$

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

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

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

$$550 = P_0 \cdot e^{(-0.06 \cdot 4)}$$

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

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

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

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

$$123 = P_0 \cdot e^{(-0.06 \cdot 8)}$$

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

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

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

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

$$131 = P_0 \cdot e^{(-0.07 \cdot 6)}$$

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

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

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

6 Solve for the starting concentration given this model of a continuous reduction of a toxin concentration?

$$563 = C_0 \cdot e^{(-0.05 \cdot 7)}$$

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

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

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

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

$$602 = P_0 \cdot e^{(-0.03 \cdot 5)}$$

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

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

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

8 Solve for the starting concentration given this model of a continuous reduction of a toxin concentration?

$$584 = C_0 \cdot e^{(-0.02 \cdot 9)}$$

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

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

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