Name ______

Exponential Function Solving - Decay (Continuous) - Equation to Time

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

$$185 = 300 \cdot e^{(-0.06 \cdot t)}$$

A $5+t=-\frac{r}{\ln\frac{P}{P_0}}$	B $3+t=-\frac{\ln P\cdot P_0}{r}$
C $t=-\frac{\ln\frac{P}{P_0}}{r}$	D $6+t=-\frac{r}{\ln\frac{P}{P_0}}$

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

$$830 = 900 \cdot e^{(-0.04 \cdot t)}$$

A $t=-\frac{\ln\frac{P}{P_0}}{r}$	B $1+t=-\frac{\ln P\cdot P_0}{r}$
C $8+t=-\frac{\ln P\cdot P_0}{r}$	D $8+t=-\frac{r}{\ln\frac{P}{P_0}}$

3 Solve for the time given this model of a continuous decay of a radioactive material?

$$426 = 800 \cdot e^{(-0.07 \cdot t)}$$

A $9+t=-\frac{\ln R\cdot R_0}{r}$	B $4+t=-\frac{\ln R\cdot R_0}{r}$
C $t=-\frac{\ln\frac{R}{R_0}}{r}$	D $7+t=-\frac{r}{\ln\frac{R}{R_0}}$

4 Solve for the time given this model of a a continuously declining bacteria population?

$$501 = 600 \cdot e^{(-0.02 \cdot t)}$$

A $4+t=-\frac{\ln P\cdot P_0}{r}$	B $0+t=-\frac{\ln P\cdot P_0}{r}$
C $1+t=-\frac{\ln P\cdot P_0}{r}$	D $t=-\frac{\ln\frac{P}{P_0}}{r}$

5 Solve for the time given this model of a a continuously declining bacteria population?

$$377 = 500 \cdot e^{(-0.04 \cdot t)}$$

A $4+t=-\frac{\ln P\cdot P_0}{r}$	B $2+t=-\frac{r}{\ln\frac{P}{P_0}}$
C $t=-\frac{\ln\frac{P}{P_0}}{r}$	D $0+t=-\frac{\ln P\cdot P_0}{r}$

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

$$668 = 800 \cdot e^{(-0.02 \cdot t)}$$

A $8+t=-\frac{r}{\ln\frac{P}{P_0}}$	B $6+t=-\frac{\ln P\cdot P_0}{r}$
C $t=-\frac{\ln\frac{P}{P_0}}{r}$	

7 Solve for the time given this model of a continuous decline of a bird population?

$$106 = 200 \cdot e^{(-0.09 \cdot t)}$$

A $6+t=-\frac{\ln P\cdot P_0}{r}$	B $3+t=-\frac{\ln P\cdot P_0}{r}$
C $0+t=-\frac{\ln P\cdot P_0}{r}$	D $t=-\frac{\ln\frac{P}{P_0}}{r}$

8 Solve for the time given this model of a continuous decline of a whale population?

$$466 = 800 \cdot e^{(-0.06 \cdot t)}$$

A $0+t=-\frac{\ln P\cdot P_0}{r}$	B $2+t=-\frac{\ln P\cdot P_0}{r}$
C $t=-\frac{\ln\frac{P}{P_0}}{r}$	