Name ______________________

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

1 Solve for the starting downloads given this model of a continuously compounding growth of app downloads?

$$1,045 = A_0 \cdot e^{(0.03 \cdot 5)}$$

A $0 + A_0 = \frac{A}{e^{(\frac{r}{t})}}$	B $4 + A_0 = \frac{e^{(r \cdot t)}}{A}$
C $1 + A_0 = \frac{e^{(r \cdot t)}}{A}$	D $A_0 = \frac{A}{e^{(r \cdot t)}}$

2 Solve for the starting price given this model of a continuously compounding growth of a share price?

$$901 = S_0 \cdot e^{(0.02 \cdot 6)}$$

A $8 + S_0 = \frac{S}{e^{(\frac{r}{t})}}$	B $S_0 = \frac{S}{e^{(r \cdot t)}}$
C $6 + S_0 = \frac{S}{e^{(\frac{r}{t})}}$	D $0 + S_0 = \frac{S}{e^{(\frac{r}{t})}}$

3 Solve for the starting cash given this model of a continuously compounding growth of money in a savings account?

$$760 = P_0 \cdot e^{(0.07 \cdot 6)}$$

A $4 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	B $6 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$
C $P_0 = \frac{P}{e^{(r \cdot t)}}$	

4 Solve for the starting population given this model of a continuous growth of a rabbit population?

$$345 = P_0 \cdot e^{(0.02 \cdot 7)}$$

A $0 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	B $5 + P_0 = \frac{e^{(r \cdot t)}}{P}$
C $2 + P_0 = \frac{e^{(r \cdot t)}}{P}$	D $P_0 = \frac{P}{e^{(r \cdot t)}}$

5 Solve for the starting debt given this model of a growth of debt on a credit card with continuous compounding?

$$635 = D_0 \cdot e^{(0.06 \cdot 4)}$$

A $0 + D_0 = \frac{e^{(r \cdot t)}}{D}$	B $7 + D_0 = \frac{D}{e^{(\frac{r}{t})}}$
C $D_0 = \frac{D}{e^{(r \cdot t)}}$	D $3 + D_0 = \frac{D}{e^{(\frac{r}{t})}}$

6 Solve for the starting population given this model of a continuous growth of an insect population?

$$1,214 = P_0 \cdot e^{(0.05 \cdot 6)}$$

A $5 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	B $P_0 = \frac{P}{e^{(r \cdot t)}}$
C $3 + P_0 = \frac{e^{(r \cdot t)}}{P}$	D $9 + P_0 = \frac{e^{(r \cdot t)}}{P}$

7 Solve for the starting views given this model of a continuous exponential growth of social media post views?

$$396 = V_0 \cdot e^{(0.07 \cdot 4)}$$

A $1 + V_0 = \frac{V}{e^{(\frac{r}{t})}}$	B $1 + V_0 = \frac{e^{(r \cdot t)}}{V}$
C $V_0 = \frac{V}{e^{(r \cdot t)}}$	D $2 + V_0 = \frac{V}{e^{(\frac{r}{t})}}$

8 Solve for the starting downloads given this model of a continuously compounding growth of app downloads?

$$700 = A_0 \cdot e^{(0.07 \cdot 8)}$$

A $3 + A_0 = \frac{e^{(r \cdot t)}}{A}$	B $4 + A_0 = \frac{e^{(r \cdot t)}}{A}$
C $A_0 = \frac{A}{e^{(r \cdot t)}}$	D $7 + A_0 = \frac{e^{(r \cdot t)}}{A}$