



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

1

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

A credit card starts with a certain amount of debt. It grows continuously at 8% interest per year. After 9 years the debt has grown to \$410.

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

2

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

An insect population starts at a certain size. It grows continuously at 9% growth per month. After 4 months it has increased to a population of 286.

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

3

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

A credit card starts with a certain amount of debt. It grows continuously at 6% interest per quarter. After 2 quarters the debt has grown to \$450.

A	$D_0 = \frac{e^{(r \cdot t)}}{D}$	B	$D_0 = \frac{D}{e^{(r \cdot t)}}$

4

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

A company's share price starts at a certain value. It grows continuously at 2% growth per month. After 9 months it has a share price of \$718.

A	$S_0 = \frac{S}{e^{(r \cdot t)}}$	B	$S_0 = \frac{e^{(r \cdot t)}}{S}$
C	$S_0 = \frac{S}{e^{(\frac{r}{t})}}$		

5

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

A company's share price starts at a certain value. It grows continuously at 5% growth per month. After 3 months it has a share price of \$232.

A	$S_0 = \frac{S}{e^{(r \cdot t)}}$	B	$S_0 = \frac{S}{e^{(\frac{r}{t})}}$

6

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

A savings account starts with a certain amount of cash. It grows continuously at 4% interest per year. After 7 years it has \$264.

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

7

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

A rabbit population starts at a certain size. It grows continuously at 6% growth per year. After 5 years it has increased to a population of 404 rabbits.

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

8

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

A bacteria population starts at a certain size. It grows continuously at 4% growth per week. After 3 weeks it has increased to a population of 563.

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