Name ____________________

mobius

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

1

A credit card starts with a certain amount of debt. It grows continuously at 5% interest per month. After 3 months the debt has grown to $1,045.

Solve for the starting debt given this scenario?

A $5 + D_0 = \frac{e^{(r\cdot t)}}{D}$	B $D_0 = \frac{D}{e^{(r\cdot t)}}$
C $8 + D_0 = \frac{D}{e^{(\frac{r}{t})}}$	D $5 + D_0 = \frac{D}{e^{(\frac{r}{t})}}$

2

A bacteria population starts at a certain size. It grows continuously at 3% growth per year. After 5 years it has increased to a population of 929.

Solve for the starting population given this scenario?

A $3 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	B $6 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$
C $8 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	D $P_0 = \frac{P}{e^{(r\cdot t)}}$

3

A social media post starts with a certain number of views. Its view count grows continually by 8% each week.After 6 weeks it has 646 views.

Solve for the starting views given this scenario?

A $7 + V_0 = \frac{V}{e^{(\frac{r}{t})}}$	B $1 + V_0 = \frac{V}{e^{(\frac{r}{t})}}$
C $V_0 = \frac{V}{e^{(r\cdot t)}}$	D $0 + V_0 = \frac{V}{e^{(\frac{r}{t})}}$

4

An insect population starts at a certain size. It grows continuously at 7% growth per year. After 6 years it has increased to a population of 456.

Solve for the starting population given this scenario?

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

5

An insect population starts at a certain size. It grows continuously at 4% growth per year. After 8 years it has increased to a population of 688.

Solve for the starting population given this scenario?

A $8 + P_0 = \frac{e^{(r\cdot t)}}{P}$	B $P_0 = \frac{P}{e^{(r\cdot t)}}$
C $2 + P_0 = \frac{e^{(r\cdot t)}}{P}$	D $0 + P_0 = \frac{e^{(r\cdot t)}}{P}$

6

A bacteria population starts at a certain size. It grows continuously at 6% growth per week. After 2 weeks it has increased to a population of 901.

Solve for the starting population given this scenario?

A $P_0 = \frac{P}{e^{(r\cdot t)}}$	B $9 + P_0 = \frac{e^{(r\cdot t)}}{P}$
C $0 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	D $2 + P_0 = \frac{e^{(r\cdot t)}}{P}$

7

A bacteria population starts at a certain size. It grows continuously at 8% growth per year. After 6 years it has increased to a population of 1,454.

Solve for the starting population given this scenario?

A $4 + P_0 = \frac{e^{(r\cdot t)}}{P}$	B $3 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$
C $P_0 = \frac{P}{e^{(r\cdot t)}}$	D $9 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$

8

An insect population starts at a certain size. It grows continuously at 6% growth per day. After 9 days it has increased to a population of 514.

Solve for the starting population given this scenario?

A $P_0 = \frac{P}{e^{(r\cdot t)}}$	B $0 + P_0 = \frac{e^{(r\cdot t)}}{P}$
C $3 + P_0 = \frac{P}{e^{(\frac{r}{t})}}$	D $7 + P_0 = \frac{e^{(r\cdot t)}}{P}$