Name ____________

Exponential Function Solving - Growth (Continuous) Scenario to Value at Time

1

An app starts with 600 downloads. Its download count grows continually by 9% each month.After 8 months it has a larger number of downloads.

How would you solve for the final downloads given this scenario?

A $A = A_0 - e^{(r \cdot t)}$	B $A = A_0 \cdot e^{(r \cdot t)}$
C $A = A_0 \cdot e^{\left(\frac{r}{t}\right)}$	

2

A bacteria population starts at 400. It grows continuously at 6% growth per year. After 9 years it has increased to a certain population.

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

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

3

A bacteria population starts at 800. It grows continuously at 7% growth per year. After 3 years it has increased to a certain population.

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

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

4

A savings account starts with $300. It grows continuously at 5% interest per quarter. After 9 quarters it has a certain amount of cash.

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

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

5

A credit card starts with $900 of debt. It grows continuously at 8% interest per quarter. After 5 quarters the debt has grown to a certain amount.

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

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

6

A bacteria population starts at 900. It grows continuously at 4% growth per day. After 2 days it has increased to a certain population.

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

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

7

A bacteria population starts at 700. It grows continuously at 6% growth per month. After 9 months it has increased to a certain population.

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

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

8

A savings account starts with $200. It grows continuously at 7% interest per month. After 5 months it has a certain amount of cash.

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

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