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

1

A rabbit population starts at a certain size. Each subsequent yearly breeding season it grows by 9%. After 8 years it has increased to a population of 1,195 rabbits.

Solve for the starting population given this scenario?

A $P_0 = \dfrac{P}{(1+r)^t}$	B $4 + P_0 = \dfrac{P}{(1-r)^t}$
C $6 + P_0 = P \cdot (1+r)^t$	D $8 + P_0 = P \cdot (1+r)^t$

2

An insect population starts at a certain size. Each subsequent yearly breeding season it grows by 9%. After 4 years it has increased to a population of 988.

Solve for the starting population given this scenario?

A $5 + P_0 = P \cdot (1+r)^t$	B $5 + P_0 = \dfrac{P}{(1-r)^t}$
C $7 + P_0 = \dfrac{P}{(1-r)^t}$	D $P_0 = \dfrac{P}{(1+r)^t}$

3

A credit card starts with a certain amount of debt. Each subsequent month it grows by 6% in interest. After 3 months the debt has grown to $952.

Solve for the starting debt given this scenario?

A $1 + D_0 = \dfrac{D}{(1-r)^t}$	B $5 + D_0 = \dfrac{D}{(1-r)^t}$
C $2 + D_0 = D \cdot (1+r)^t$	D $D_0 = \dfrac{D}{(1+r)^t}$

4

A credit card starts with a certain amount of debt. Each subsequent quarter it grows by 6% in interest. After 9 quarters the debt has grown to $1,182.

Solve for the starting debt given this scenario?

A $D_0 = \dfrac{D}{(1+r)^t}$	B $9 + D_0 = D \cdot (1+r)^t$
C $3 + D_0 = D \cdot (1+r)^t$	D $7 + D_0 = \dfrac{D}{(1-r)^t}$

5

An insect population starts at a certain size. Each subsequent yearly breeding season it grows by 4%. After 2 years it has increased to a population of 540.

Solve for the starting population given this scenario?

A $1 + P_0 = \dfrac{P}{(1-r)^t}$	B $0 + P_0 = P \cdot (1+r)^t$
C $P_0 = \dfrac{P}{(1+r)^t}$	

6

A credit card starts with a certain amount of debt. Each subsequent year it grows by 3% in interest. After 7 years the debt has grown to $491.

Solve for the starting debt given this scenario?

A $4 + D_0 = D \cdot (1+r)^t$	B $9 + D_0 = \dfrac{D}{(1-r)^t}$
C $D_0 = \dfrac{D}{(1+r)^t}$	D $7 + D_0 = \dfrac{D}{(1-r)^t}$

7

A savings account starts with a certain amount of cash. Each subsequent month it earns 5% in interest. After 4 months it has $243.

Solve for the starting cash given this scenario?

A $P_0 = \dfrac{P}{(1+r)^t}$	B $5 + P_0 = \dfrac{P}{(1-r)^t}$
C $2 + P_0 = \dfrac{P}{(1-r)^t}$	D $3 + P_0 = P \cdot (1+r)^t$

8

An insect population starts at a certain size. Each subsequent yearly breeding season it grows by 8%. After 7 years it has increased to a population of 514.

Solve for the starting population given this scenario?

A $P_0 = \dfrac{P}{(1+r)^t}$	B $8 + P_0 = P \cdot (1+r)^t$
C $3 + P_0 = P \cdot (1+r)^t$	