mobius

Exponential Function Solving - Growth (Discrete, Mis-matched Time Units) Scenario to Value at Time

1

A savings account starts with $900. Each subsequent year it earns 7% in interest. After 16 quarters it has a certain amount of cash.

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

A $P = \dfrac{P_0}{(1+r)^{\left(\frac{t}{4}\right)}}$	B $P = P_0 \cdot (1+r)^{\left(\frac{t}{4}\right)}$
C $P = P_0 \cdot (1-r)^{(t \cdot 4)}$	

2

A savings account starts with $500. Each subsequent year it earns 2% in interest. After 24 quarters it has a certain amount of cash.

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

A $P = P_0 \cdot (1+r)^{\left(\frac{t}{4}\right)}$

B $P = \dfrac{P_0}{(1+r)^{\left(\frac{t}{4}\right)}}$

3

A credit card starts with $400 of debt. Each subsequent quarter it grows by 3% in interest. After 21 months the debt has grown to a certain amount.

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

A $D = D_0 \cdot (1+r)^{\left(\frac{t}{3}\right)}$

B $D = \dfrac{D_0}{(1+r)^{\left(\frac{t}{3}\right)}}$

4

A savings account starts with $500. Each subsequent year it earns 7% in interest. After 32 quarters it has a certain amount of cash.

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

A $P = P_0 \cdot (1+r)^{\left(\frac{t}{4}\right)}$	B $P = P_0 \cdot (1-r)^{(t \cdot 4)}$
C $P = \dfrac{P_0}{(1+r)^{\left(\frac{t}{4}\right)}}$	

5

A savings account starts with $700. Each subsequent month it earns 8% in interest. After 6 years it has a certain amount of cash.

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

A $P = P_0 \cdot (1-r)^{\left(\frac{t}{12}\right)}$

B $P = P_0 \cdot (1+r)^{(t \cdot 12)}$

6

A credit card starts with $500 of debt. Each subsequent month it grows by 9% in interest. After 4 years the debt has grown to a certain amount.

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

A $D = \dfrac{D_0}{(1+r)^{(t \cdot 12)}}$

B $D = D_0 \cdot (1+r)^{(t \cdot 12)}$

7

A savings account starts with $800. Each subsequent quarter it earns 4% in interest. After 6 years it has a certain amount of cash.

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

A $P = \dfrac{P_0}{(1+r)^{(t \cdot 4)}}$

B $P = P_0 \cdot (1+r)^{(t \cdot 4)}$

8

A savings account starts with $500. Each subsequent month it earns 8% in interest. After 3 quarters it has a certain amount of cash.

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

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