



## Exponential Function Solving - Growth (Discrete, Mis-matched Time Units)

### Equation to Value at Time

1 Solve for the final debt given this model of a growth in credit card debt with quarterly interest?

$$D = 400 \cdot (1 + 0.06)^{(3 \cdot 4)}$$

A  $D = D_0 \cdot (1 + r)^{(t \cdot 4)}$

B  $D = D_0 \cdot (1 - r)^{(\frac{t}{4})}$

C  $D = \frac{D_0}{(1 + r)^{(t \cdot 4)}}$

2 Solve for the final debt given this model of a growth in credit card debt with monthly interest?

$$D = 500 \cdot (1 + 0.08)^{(7 \cdot 3)}$$

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

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

C  $D = D_0 \cdot (1 - r)^{(\frac{t}{3})}$

3 Solve for the final cash given this model of a yearly compounding growth of money in a savings account?

$$P = 500 \cdot (1 + 0.07)^{(\frac{32}{4})}$$

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

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

C  $P = \frac{P_0}{(1 + r)^{(\frac{t}{4})}}$

4 Solve for the final cash given this model of a quarterly compounding growth of money in a savings account?

$$P = 800 \cdot (1 + 0.07)^{(5 \cdot 4)}$$

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

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

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

5 Solve for the final cash given this model of a yearly compounding growth of money in a savings account?

$$P = 600 \cdot (1 + 0.02)^{(\frac{84}{12})}$$

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

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

C  $P = P_0 \cdot (1 - r)^{(t \cdot 12)}$

6 Solve for the final debt given this model of a growth in credit card debt with monthly interest?

$$D = 200 \cdot (1 + 0.09)^{(5 \cdot 3)}$$

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

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

C  $D = D_0 \cdot (1 + r)^{(t \cdot 3)}$

7 Solve for the final debt given this model of a growth in credit card debt with quarterly interest?

$$D = 500 \cdot (1 + 0.07)^{(2 \cdot 4)}$$

A  $D = \frac{D_0}{(1 + r)^{(t \cdot 4)}}$

B  $D = D_0 \cdot (1 - r)^{(\frac{t}{4})}$

C  $D = D_0 \cdot (1 + r)^{(t \cdot 4)}$

8 Solve for the final cash given this model of a yearly compounding growth of money in a savings account?

$$P = 300 \cdot (1 + 0.05)^{(\frac{24}{12})}$$

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

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

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