

## mobius

## **Exponential Function Growth (Discrete) -Equation and Scenario to Specific Value**

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| 1 | What is the final cash in this equation for a quarterly |  |
|---|---|--|
|   | compounding growth of money in a savings account?       |  |

What is the time in this equation for a monthly compounding growth of money in a savings account?

$$886 = 700 \cdot (1 + 0.04)^{(6)}$$

$$886 = 700 \cdot (1 + 0.04)^{(6)} 591 = 400 \cdot (1 + 0.05)^{(8)}$$

| Α | P = 6   | В | P = 886 |
|---|---------|---|---------|
| С | P = 700 |   |         |

$$t = 8$$

$$t = 400$$

What is the starting debt in this equation for a growth in credit card debt with monthly interest?

$$914 = 500 \cdot (1 + 0.09)^{(7)}$$

$$|914 = 500 \cdot (1 + 0.09)^{(7)}|598 = 500 \cdot (1 + 0.02)^{(9)}$$

$$\overset{\scriptscriptstyle \mathsf{h}}{t} = \mathsf{7} \, \overset{\scriptscriptstyle \mathsf{h}}{t} = \mathsf{914} \overset{\scriptscriptstyle \mathsf{h}}{t} = \mathsf{500}$$

$$egin{array}{c|cccc} \mathsf{A} & D_0=2 & \mathsf{B} & D_0=9 \ \hline \mathsf{C} & D_0=500 & & & \end{array}$$

- 5 What is the rate in this equation for a growth of a rabbit population (yearly breeding cycle)?
- What is the time in this equation for a growth of an insect population that breeds once per year?

$$238 = 200 \cdot (1 + 0.06)^{(3)}$$

$$238 = 200 \cdot (1 + 0.06)^{(3)} 476 = 400 \cdot (1 + 0.06)^{(3)}$$

A 
$$r=238\%$$
 B  $r=200\%$  C  $r=6\%$ 

$$t = 400$$

$$t = 3$$

- 7 What is the starting population in this equation for a growth of an insect population that breeds once per year?
- What is the starting population in this equation for a growth of an insect population that breeds once per year?

$$735 = 400 \cdot (1 + 0.07)^{(9)} 600 = 300 \cdot (1 + 0.08)^{(9)}$$

$$600 = 300 \cdot (1 + 0.08)^{(9)}$$

| Α | $P_0 = 735$ | В | $P_0 = 400$ | A | $P_0 = 9$   | В | $P_0 = 599$ |
|---|-------------|---|-------------|---|-------------|---|-------------|
| С | $P_0 = 9$   |   |             | С | $P_0 = 300$ |   |             |
|   |             |   |             |   |             |   |             |