# mobius

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

**1**

A savings account starts with $300. Each subsequent month it earns a certain percent interest. After 5 quarters it has $461.

How would you solve for the rate given this scenario?

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

**2**

A credit card starts with $800 of debt. Each subsequent month it grows by a certain percent interest. After 2 years the debt has grown to $898.

How would you solve for the rate given this scenario?

| A $r = +(\frac{D}{D_0})^{\frac{t\cdot 12}{2}} - 1$ | B $r = +(\frac{D}{D_0})^{\frac{1}{t\cdot 12}} + 1$ |
|---|---|
| C $r = +(\frac{D}{D_0})^{\frac{1}{t\cdot 12}} - 1$ | |
| | |

**3**

A credit card starts with $900 of debt. Each subsequent quarter it grows by a certain percent interest. After 15 months the debt has grown to $2,483.

How would you solve for the rate given this scenario?

| A | B |
|---|---|
| $r = +(\frac{D}{D_0})^{\frac{t}{\frac{3}{2}}} - 1$ | $r = +(\frac{D}{D_0})^{\frac{1}{\frac{t}{3}}} - 1$ |

**4**

A savings account starts with $800. Each subsequent quarter it earns a certain percent interest. After 9 months it has $956.

How would you solve for the rate given this scenario?

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

**5**

A savings account starts with $600. Each subsequent year it earns a certain percent interest. After 36 quarters it has $9,580.

How would you solve for the rate given this scenario?

| A $r = +(\frac{P}{P_0})^{\frac{t}{\frac{4}{2}}} - 1$ | B $r = +(\frac{P}{P_0})^{\frac{1}{t\cdot 4}} + 1$ |
|---|---|
| C $r = +(\frac{P}{P_0})^{\frac{1}{\frac{t}{4}}} - 1$ | |
| | |

**6**

A credit card starts with $700 of debt. Each subsequent year it grows by a certain percent interest. After 8 quarters the debt has grown to $1,034.

How would you solve for the rate given this scenario?

| A | B |
|---|---|
| $r = +(\frac{D}{D_0})^{\frac{1}{\frac{t}{4}}} - 1$ | $r = +(\frac{D}{D_0})^{\frac{t}{\frac{4}{2}}} - 1$ |

**7**

A credit card starts with $300 of debt. Each subsequent month it grows by a certain percent interest. After 2 quarters the debt has grown to $356.

How would you solve for the rate given this scenario?

| A $r = +(\frac{D}{D_0})^{\frac{t\cdot 3}{2}} - 1$ | B $r = +(\frac{D}{D_0})^{\frac{1}{t\cdot 3}} - 1$ |
|---|---|
| C $r = +(\frac{D}{D_0})^{\frac{1}{\frac{t}{3}}} + 1$ | |
| | |

**8**

A credit card starts with $700 of debt. Each subsequent quarter it grows by a certain percent interest. After 2 years the debt has grown to $742.

How would you solve for the rate given this scenario?

| A | B |
|---|---|
| $r = +(\frac{D}{D_0})^{\frac{t\cdot 4}{2}} - 1$ | $r = +(\frac{D}{D_0})^{\frac{1}{t\cdot 4}} - 1$ |