



Calculate compound interest with varied compounding periods

1

What does this term represent in a model of monthly compounding growth of money in a savings account?

$$P = P_0 \cdot (1 + r)^t$$

$P = ?$

A

$$P = \text{rate}$$

B

$$P = \text{final cash}$$

2

In this model of quarterly compounding growth of money in a savings account, which term represents the rate?

$$P = P_0 \cdot (1 + r)^t$$

rate = ?

A

$$r$$

B

$$t$$

C

$$F$$

D

$$P_0$$

3

Which scenario describes this equation?

$$4,020 = 3000 \cdot (1 + 0.05)^{(6)}$$

A

A savings account starts with \$3000. Each subsequent quarter it earns 5% in interest. After 6 quarters it has \$4,020.

B

A savings account starts with \$600. Each subsequent quarter it earns 5% in interest. After 30 quarters it has \$4,020.

4

A savings account starts with \$2000. Each subsequent year it earns 9% in interest. After 5 years it has \$3,077.

A

$$3,077 = 500 \cdot (1 + 0.09)^{(20)}$$

B

$$3,077 = 2000 \cdot (1 + 0.09)^{(5)}$$

5

What is the final cash in this equation for a yearly compounding growth of money in a savings account?

$$8,255 = 5800 \cdot (1 + 0.04)^{(9)}$$

A

$$P = 7,430$$

B

$$P = 5,700$$

C

$$P = 8,255$$

D

$$P = 9,180$$

6

What is the value of the final cash given this model of a yearly compounding growth of money in a savings account?

$$P = 1600 \cdot (1 + 0.04)^{(8)}$$

A

$$P = 2,440$$

B

$$P = 1,420$$

C

$$P = 2,189$$

D

$$P = 2,500$$



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7

What does the highlighted variable in the formula represent?

$$r_{\text{eff}} = \left(1 + \frac{r_{\text{nom}}}{m} \right)^m - 1$$

- A the final account balance B the nominal annual interest rate C the effective annual interest rate D the number of compounding periods per year

8

Which formula highlights the effective annual interest rate?

A $r_{\text{eff}} = \left(1 + \frac{r_{\text{nom}}}{n} \right)^n - 1$

B $r_{\text{eff}} = \left(1 + \frac{r_{\text{nom}}}{n} \right)^n - 1$

C $r_{\text{eff}} = \left(1 + \frac{r_{\text{nom}}}{n} \right)^n - 1$

9

A nominal annual interest rate of 6% is compounded quarterly. What is the effective annual interest rate, to 2 decimal places? Use the formula shown.

$$r_{\text{eff}} = \left(1 + \frac{r_{\text{nom}}}{n} \right)^n - 1$$

- A 6.14% B 6.18% C 6.17% D 6.00%

10

A nominal annual interest rate of 3% is compounded weekly. What is the effective annual interest rate, to 2 decimal places?

A 3.03%

B 3.00%

C 3.05%

D 3.04%

11

A savings account starts with \$2300. Each subsequent month it earns 6% in interest. After 7 months it has a certain amount of cash.

A $P = 3,830$

B $P = 3,960$

C $P = 3,460$

D $P = 3,458$

12

What is the value of the final debt given this model of a growth in credit card debt with quarterly interest?

$$D = 300 \cdot (1 + 0.09)^{(4 \cdot 4)}$$

A $D = 1,780$

B $D = 850$

C $D = 1,191$

D $D = 1,730$