



Calculate effective annual interest rates

- 1** \$80 principle grows by 30% interest

A \$130.00

B \$98.80

C \$119.60

D \$78.00

E \$104.00

F \$135.20

- 2** What does this term represent in a model of growth in credit card debt with yearly interest?

$$D = D_0 \cdot (1 + r)^t$$
$$D_0 = ?$$

A D_0 = starting debt

B D_0 = final debt

- 3** What does this term represent in a model of yearly compounding growth of money in a savings account?

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

A t = rate

B t = time

- 4** Which scenario describes this equation?
- $$2,651 = 2100 \cdot (1 + 0.06)^{(4)}$$

A A savings account starts with \$400. Each subsequent year it earns 6% in interest. After 21 years it has \$2,651.

B A savings account starts with \$2100. Each subsequent year it earns 6% in interest. After 4 years it has \$2,651.

- 5** A savings account starts with \$4700. Each subsequent year it earns 2% in interest. After 3 years it has \$4,987.

A $4,987 = 300 \cdot (1 + 0.02)^{(47)}$

B $4,987 = 4700 \cdot (1 + 0.02)^{(3)}$

C $4,987 = 4700 \cdot (1 + 0.03)^{(2)}$

D $4,987 = 200 \cdot (1 + 0.47)^{(3)}$

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

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

$$P = 3200 \cdot (1 + 0.08)^{(5)}$$

A $P = 4,510$

B $P = 3,640$

C $P = 4,701$

D $P = 4,590$



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What does the highlighted variable in the formula represent?

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

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

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A nominal annual interest rate of 9% is compounded monthly. What is the effective annual interest rate, to 2 decimal places? Use the formula shown.

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

- | | | | |
|---------|---------|---------|---------|
| A 9.00% | B 9.38% | C 9.41% | D 9.42% |
|---------|---------|---------|---------|

10

An effective annual interest rate of 14.75% is compounded quarterly. What is the nominal annual interest rate?

- | | |
|-------|-------|
| A 3% | B 11% |
| C 16% | D 14% |

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A nominal annual interest rate of 7% is compounded weekly. What is the effective annual interest rate, to 2 decimal places?

- | | |
|---------|---------|
| A 7.00% | B 7.25% |
| C 7.19% | D 7.23% |

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An effective annual interest rate of 3.04% is compounded weekly. What is the nominal annual interest rate? Use the formula shown.

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

- | | | | |
|-------|------|------|-------|
| A 16% | B 3% | C 7% | D 17% |
|-------|------|------|-------|