



Evaluate long-term financial plans

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

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

- A P_0 = rate
- B P_0 = final cash
- C P_0 = starting cash

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Which scenario describes this equation?

$$3,896 = 3600 \cdot (1 + 0.02)^{(4)}$$

- A A savings account starts with \$3600. Each subsequent quarter it earns 2% in interest. After 4 quarters it has \$3,896.
- B A savings account starts with \$400. Each subsequent quarter it earns 2% in interest. After 36 quarters it has \$3,896.

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A savings account starts with \$1200. Each subsequent quarter it earns 5% in interest. After 6 quarters it has \$1,608.

- A $1,608 = 1200 \cdot (1 + 0.06)^{(5)}$
- B $1,608 = 1200 \cdot (1 + 0.05)^{(6)}$
- C $1,608 = 500 \cdot (1 + 0.12)^{(6)}$
- D $1,608 = 600 \cdot (1 + 0.05)^{(12)}$

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Which scenario describes this equation?

$$8,354 = 5600 \cdot e^{(0.05 \cdot 8)}$$

- A A savings account starts with \$500. It grows continuously at 56% interest per quarter. After 8 quarters it has \$8,354.
- B A savings account starts with \$5600. It grows continuously at 5% interest per quarter. After 8 quarters it has \$8,354.

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

$$2,865 = 2700 \cdot (1 + 0.02)^{(3)}$$

- A $P_0 = 2900$
- B $P_0 = 2700$
- C $P_0 = 2400$
- D $P_0 = 3000$

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

$$P = 2000 \cdot (1 + 0.06)^{(9)}$$

- A $P = 2,320$
- B $P = 4,580$
- C $P = 4,330$
- D $P = 3,378$



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A credit card starts with \$800 of debt. Each subsequent quarter it grows by 6% in interest. After 6 months the debt has grown to a certain amount.

A	$D = 565$
B	$D = 898$
C	$D = 1,160$
D	$D = 935$

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What is the rate in this equation for a continuously compounding growth of money in a savings account?

$$9,763 = 5200 \cdot e^{(0.09 \cdot 7)}$$

A	$r = 10\%$
B	$r = 9\%$
C	$r = 4\%$
D	$r = 12\%$

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

$$P = 3800 \cdot e^{(0.08 \cdot 9)}$$

A	$P = 10,100$
B	$P = 7,806$
C	$P = 10,060$
D	$P = 6,420$

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A rabbit population starts at 300. It grows continuously at 5% growth per year. After 4 quarters it has increased to a certain population.

A	$P = 350$
B	$P = 315$
C	$P = 310$
D	$P = 460$

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A savings account starts with \$3700. It grows continuously at 2% interest per month. After 4 months it has a certain amount of cash.

A	$P = 5,740$
B	$P = 4,008$
C	$P = 3,670$
D	$P = 4,980$



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Including the fee, what single yearly interest rate is equivalent to this investment? Round to one decimal place.

Investment Details	
Principal	\$850
Interest Rate	1.8%
Compounding	Continual
Term	4 years
Fees	\$46.29

- A 1.0% B 3.1% C 0.5% D 1.8%

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Which option is the better investment (the higher net return)?

Option A: Investment		Option B: Investment	
Principal	\$3,000	Principal	\$3,000
Interest Rate	18.80%	Interest Rate	18.54%
Compounding	Monthly	Compounding	Continual
Term	2 years	Term	2 years
Fees	None	Fees	None

- A B B A

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A savings account starts with \$5600. Each subsequent month it earns 7% in interest. After 8 months it has a certain amount of cash.

- A $P = 9,621$
B $P = 10,840$
C $P = 7,530$
D $P = 11,700$

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Over the full term of this investment, what are the net earnings (interest minus fees)?

Investment Details	
Principal	\$3,650
Interest Rate	12.1%
Compounding	Quarterly
Term	4 years
Fees	\$354.82

- A \$1,875.14 B \$2,229.97 C \$1,520.32 D \$2,584.79

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Over the full term of this loan, how much is paid in interest and fees in total?

Loan Details	
Principal	\$3,100
Interest Rate	17.7%
Compounding	Continual
Term	2 years
Fees	\$301.34

- A \$301.34 B \$1,618.08 C \$1,919.42 D \$1,316.74

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Including the fee, what single yearly interest rate is equivalent to this investment? Round to one decimal place.

Investment Details	
Principal	\$3,650
Interest Rate	4.7%
Compounding	Yearly
Term	5 years
Fees	\$154.67

- A 6.3% B 2.6% C 4.7%
D 3.1% E 1.5% F 3.6%