

Financial Mathematics

1 What is the value of the final cash given this scenario?

A savings account starts with \$6000. Each subsequent month it earns 4% in interest. After 7 months it has a certain amount of cash.

A	$P = 7,895$
B	$P = 7,700$
C	$P = 10,500$
D	$P = 5,340$

2 Find the effective annual interest rate.

A nominal annual interest rate of 18% is compounded monthly. What is the effective annual interest rate, to 2 decimal places?

A	19.25%	B	18.00%
C	19.68%	D	19.56%

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

A	3.05%	B	3.04%
C	3.03%	D	3.00%

4 Find the nominal annual interest rate.

An effective annual interest rate of 15.87% is compounded quarterly. What is the nominal annual interest rate?

A	15%	B	7%
C	11%	D	14%

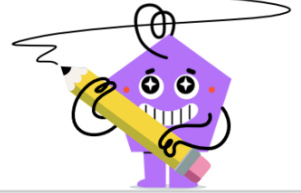
5 An effective annual interest rate of 11.63% is compounded daily. What is the nominal annual interest rate? Use the formula shown.

A	12%	B	14%
C	11%	D	4%

6 What is the value of the starting cash given this scenario?

A savings account starts with a certain amount of cash. Each subsequent year it earns 2% in interest. After 7 years it has \$1,378.

A	$P_0 = 900$
B	$P_0 = 1000$
C	$P_0 = 1200$
D	$P_0 = 1300$



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

Option A: Investment

Principal	\$1,550
Interest Rate	12.0%
Term	1 year
Fees	None

Option B: Investment

Principal	\$1,550
Interest Rate	14.7%
Term	1 year
Fees	\$40.30

A

B

B

A

8 Which option is the better loan (the lower total cost)?

Option A: Loan

Principal	\$1,450
Interest Rate	9.6%
Compounding	Weekly
Term	3 years
Fees	None

Option B: Loan

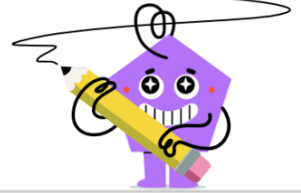
Principal	\$1,450
Interest Rate	8.4%
Compounding	Weekly
Term	3 years
Fees	\$91.55

A

A

B

B



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

Investment Details

Principal	\$1,850
Interest Rate	2.1%
Compounding	Monthly
Term	2 years
Fees	\$75.58

A

2.1%

B

0.1%

C

0.6%

D

4.1%

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

Loan Details

Principal	\$3,650
Interest Rate	9.3%
Compounding	Continual
Term	5 years
Fees	\$359.32

A

10.0%

B

11.0%

C

9.3%

D

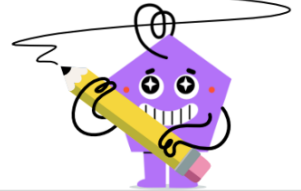
11.7%

E

8.1%

F

10.5%



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11 Which option is the better loan (the lower total cost)?

Option A: Loan	
Principal	\$3,050
Interest Rate	16.73%
Compounding	Continual
Term	3 years
Fees	None

Option B: Loan	
Principal	\$3,050
Interest Rate	17.00%
Compounding	Monthly
Term	3 years
Fees	None

A

A

B

B

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

Investment Details	
Principal	\$2,150
Interest Rate	4.6%
Compounding	Quarterly
Term	5 years
Fees	\$205.89

A

\$552.44

B

\$758.34

C

\$346.55

D

\$140.65