1. True or False:

   An annual interest rate quoted at 6 percent compounded monthly means interest is paid at a rate of 6% each month.

   Answer:

   The correct answer is **False**.

   An annual interest rate quoted at 6 percent compounded monthly means interest is paid 6%/12=0.5% each month

2. What is the effective annual rate on 1–year CD with a stated annual rate of 8% compounded quarterly? Round off your final answer to three digits after the decimal point. State your answer as a percentage 'x.xxx' (i.e. 1.234)

   Answer:

   The correct answer is **8.243**.

   Finding the effective rate involves first finding the rate per compounding period and then figuring out how many times the rate will get compounded over the period under consideration.

   Effective annual rate = $(1+APR/m)^m - 1$

   where APR is the stated annual rate, m is the number of compounding period per year.

   EAR = $(1+ 8\%/4)^4 - 1 = 8.243\%$

3. What is the effective six-month rate if the stated annual rate is 8% compounded quarterly? Round off your final answer to two digits after the decimal point. State your answer as as percentage 'x.xx' (i.e. 1.23)

   Answer:

   The correct answer is **4.04**.

   Finding the effective rate involves first finding the rate per compounding period and then figuring out how many times the rate will get compounded over the period under consideration.

   effective 6-month rate = $(1+ 8\%/4)^2 - 1 = 4.04\%$.

4. What is the effective six-month rate if the stated annual rate is 8% compounded monthly? Round off your final answer to three digits after the decimal point. State your answer as a percentage 'x.xxx' (i.e. 1.234)

   Answer:

   The correct answer is **4.067**.

   Finding the effective rate involves first finding the rate per compounding period and then figuring out how many times the rate will get compounded over the period under consideration.

   effective 6-month rate = $(1+ 8\%/12)^6 - 1 = 4.067\%$.

5. What is the five-year effective rate if the stated annual rate is 6% compounded semi-annually? Round off your final answer to three digits after the decimal point. State your answer as a percentage rate 'x.xxx' (i.e. 1.234)

   Answer:

   The correct answer is **34.392**.

   Finding the effective rate involves first finding the rate per compounding period and then figuring out how many times the rate will get compounded over the period under consideration.

   Five-year effective rate = $(1+ 6\%/2)^{10} - 1 = 34.392\%$.

6. Which one would you prefer as an investment return?

   a) A stated annual rate of return of 6%, compounded monthly

   In order to compare these alternatives, we need to find the effective annual rate.

   Effective annual rate = $(1+APR/m)^m - 1$

   where APR is the stated annual rate, m is the number of compounding period per year.

   EAR = $(1+ 6\%/12)^{12} - 1 = 6.167\%$.

   This is not the highest.

   b) A stated annual rate of return of 7%, compounded quarterly

In order to compare these alternatives, we need to find the effective annual rate.

Effective annual rate = $(1+APR/m)^m - 1$

where APR is the stated annual rate, m is the number of compounding period per year.

EAR = $(1+ 7\%/4)^4 - 1 = 7.185\%$.

This is not the highest.

c) A stated annual rate of return of 6.5%, compounded semi-annually

In order to compare these alternatives, we need to find the effective annual rate.

Effective annual rate = $(1+APR/m)^m - 1$

where APR is the stated annual rate, m is the number of compounding period per year.

EAR = $(1+ 6.5\%/2)^2 - 1 = 6.605\%$.

This is not the highest.

d) A three-month rate of 2%, compounded quarterly

In order to compare these alternatives, we need to find the effective annual rate.

Effective annual rate = $(1+APR/m)^m - 1$

where APR is the stated annual rate, m is the number of compounding period per year.

EAR = $(1+ 2\%)^4 - 1 = 8.24\%$.

Yes, this is the highest.

Answer:

The correct answer is **d**.

7. What is the effective 3-month return on a 1-year certificate of deposit with a stated annual rate of 8% compounded quarterly?

a) 2%

b) 2.67%

c) 4.63%

d) 4.04%

Answer:

The correct answer is **a**.

Finding the effective rate involves first finding the rate per compounding period and then figuring out how many times the rate will get compounded over the period under consideration.

Since the 3-month period corresponds to a quarter, the 3-month rate is simply the stated annual rate divided by 4. Therefore, the effective 3-month rate is 8%/4 = 2%.