Effective annual rates

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Effective annual rate for 8% nominal compounded quarterly,3 decimal places? [2 marks]

$(1.02^4 - 1) \times 100\%.$

Answer: 8.243%

2. Effective annual rate for 1% per month,3 decimal places? [2 marks]

$(1.01^{12} - 1) \times 100\%.$

Answer: 12.683%

3. Compare 7% effective annually with 6.9% nominal compounded monthly, ignoring fees. [2 marks]

Its effective rate is 7.122%, above 7%.

Answer: The 6.9% nominal account grows faster.

4. Quarterly rate equivalent to 12% effective annually,3 decimal places as a percentage? [2 marks]

$i = 1.12^{\frac{1}{4}} - 1.$

Answer: 2.874%

5. Why do nominal and effective annual rates agree when compounded annually? [2 marks]

Set $m = 1 : (1 + r)^1 - 1 = r.$

Answer: There is only one compounding period.

6. AUD 2000 becomes AUD 2120 in one year with no transactions or fees. Find effective annual rate. [2 marks]

$\frac{(2120 - 2000)}{2000} = 0.06.$

Answer: 6%