Inflation/tax/fees

6 questions | 18 marks

Equivalent correct methods earn the corresponding marks.

1. AUD 8,000 earns 4% interest, then a fixed AUD 50 fee is charged. Find the final balance. [3 marks]

Interest is $8000 \times 0.04 = 320$.

Balance is $8000 + 320 - 50 = 8270$.

Answer: AUD 8,270.00

2. A 7% annual return is taxed at a stated 25% of interest. Find the after-tax interest rate. [3 marks]

The retained fraction of interest is 0.75.

Net rate is $0.07 \times 0.75 = 0.0525$.

Answer: 5.2500%

3. Prices rise 2.5% annually for 4 years. What future amount has the purchasing power of AUD 10,000 today? [3 marks]

Increase the target by the price growth factor.

Future target is $10000(1.025)^4$.

Answer: AUD 11,038.13

4. A balance of AUD 15,000 in 5 years is measured when inflation has been 3% annually. Express it in today's dollars. [3 marks]

Discount the future dollars by cumulative inflation.

Real amount is $\frac{15000}{(1.03)^5}$.

Answer: AUD 12,939.13

5. An account grows 2% while prices grow 4%. Calculate its real return and interpret the sign. [3 marks]

Real factor is $\frac{1.02}{1.04}$.

The result is below 1, so the real rate is negative.

Answer: -1.9231%; purchasing power falls.

6. AUD 3,000 earns 5%, then a fee of 1% of the post-interest balance is charged. Find the final balance. [3 marks]

Post-interest balance is $3000 \times 1.05 = 3150$.

Retain 99% after the stated fee: $3150 \times 0.99 = 3118.50$.

Answer: AUD 3,118.50