Compound interest and compounding periods

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Balance on AUD 1000 at 5% compounded annually for 2 years? [2 marks]

$A = 1000(1.05)^2 = 1102.50.$

Answer: AUD 1,102.50

2. Compound interest on AUD 6000 at 4% annually for 3 years? [2 marks]

$A = 6000(1.04)^3 = 6749.184.$

$\text{Interest} = A - 6000.$

Answer: AUD 749.18

3. Balance on AUD 1500 at 8% nominal compounded half-yearly for 2 years? [2 marks]

$i = 0.04; \quad n = 4.$

$A = 1500(1.04)^4.$

Answer: AUD 1,754.79

4. Balance on AUD 8000 at 6% nominal compounded quarterly for 18 months? [2 marks]

$i = 0.015; \quad n = 6.$

$A = 8000(1.015)^6.$

Answer: AUD 8,747.55

5. Compare AUD 2000 at 10% simple and 10% annual compound interest after 2 years. [2 marks]

$\text{Simple} = 2000(1 + 0.1 \times 2).$

$\text{Compound} = 2000(1.1)^2.$

Answer: AUD 2400 simple; AUD 2420 compound

6. A monthly model uses $B_{\text{next}} = 1.005B$. State monthly and nominal annual rates. [2 marks]

$i = 0.005.$

$12i = 0.06.$

Answer: 0.5% monthly;6% nominal p.a.