Superannuation models

6 questions | 17 marks

Equivalent correct methods earn the corresponding marks.

1. A model has an annual gross contribution of AUD 6,400 and a stated contribution deduction of 12%. Find the net contribution. [3 marks]

Net is $6400(1-0.12)$.

$6400 \times 0.88 = 5632$.

Answer: AUD 5,632.00

2. A fund starts at AUD 8,000, earns 5%, then receives a net AUD 2,200 contribution and pays a fixed AUD 90 fee at year end. Find its new balance. [3 marks]

Interest is $8000 \times 0.05 = 400$.

Balance is $8000 + 400 + 2200 - 90 = 10510$.

Answer: AUD 10,510.00

3. A constant net contribution is AUD 2,500 at each year end. At 4%, starting from zero, find the balance after 12 years. [3 marks]

This is an ordinary annuity with $R = 2500$, $i = 0.04$ and $n = 12$.

Use $\frac{R((1+i)^n - 1)}{i}$.

Answer: AUD 37,564.51

4. A balance of AUD 10,000 earns 5% in year 1 and -3% in year 2. Add AUD 2,000 at each year end. Find the final balance. [3 marks]

After year 1: $10000 \times 1.05 + 2000 = 12500$.

After year 2: $12500 \times 0.97 + 2000 = 14125$.

Answer: AUD 14,125.00

5. Compare fixed year-end fees of AUD 80 and AUD 150 over 10 years at 4%, with all other cash flows identical. Find the difference in final balances. [3 marks]

The fee difference is AUD 70 each year.

Its accumulated effect is the future value of ten end-of-year AUD 70 payments.

Answer: AUD 840.43

6. Explain why a projected balance based on 6% every year is not a guaranteed result. [2 marks]

Identify the assumed quantities.

A valid calculation only describes what follows if those assumptions hold.

Answer: The return is an assumed constant; actual yearly returns, contributions, fees and timing may differ.