Repayments, outstanding balances and total interest

6 questions | 18 marks

Equivalent correct methods earn the corresponding marks.

1. A debt of AUD 7,000 has been reduced to AUD 2,100 after total repayments of AUD 5,600. Find the interest charged so far. [3 marks]

Principal repaid is $7000 - 2100 = 4900$.

Interest paid is $5600 - 4900 = 700$.

Answer: AUD 700.00

2. The balance before a final month is AUD 215.70. The monthly rate is 0.6%. Find the final payment. [3 marks]

Add the final month's interest to the remaining balance.

$215.70 \times 1.006 = 216.9942$, so pay AUD 216.99 under final-cent rounding.

Answer: AUD 216.99

3. A no-fee loan of AUD 8,000 has 20 payments of AUD 430 and a final payment of AUD 195. Find the total interest. [3 marks]

Total payments is $20 \times 430 + 195 = 8795$.

Interest is $8795 - 8000 = 795$.

Answer: AUD 795.00

4. For AUD 5,000 at 0.75% monthly and AUD 250 repayments, calculate the debt after 6 payments. [3 marks]

Use the outstanding-balance formula with $k = 6$.

Retain unrounded intermediate values.

Answer: AUD 3,700.85

5. A payment schedule has 11 usual payments of AUD 300 followed by AUD 184.20. Its principal is AUD 3,200. Find total interest. [3 marks]

Total paid is $11 \times 300 + 184.20 = 3484.20$.

Subtract principal to obtain AUD 284.20.

Answer: AUD 284.20

6. An exact annuity repayment leaves 9 payments of AUD 700 at an interest rate of 0.4% per period. Find the outstanding balance immediately after the most recent payment. [3 marks]

Discount the remaining nine payments to the current date.

Balance is $700(1 - 1.004^{-9})/0.004$.

Answer: AUD 6,175.83