

Financial Mathematics: worked examples

HSC Mathematics Advanced

These examples show assessable skills, not an official HSC topic weighting or prediction. The 2024 NSW syllabuses have their first HSC examination in 2027; students sitting the 2026 HSC continue under the applicable 2017 syllabus.

Worked example 1 | 3 marks

Catalog reference: adv_sgs24_arithmetic_series_sum_from_last_term | seed 41001 | mapping adv-m1-1

Arithmetic series

Calculate the sum $\$10 + (10 + 4) + \dots + 246\$$.

(a) Find the number of terms and hence calculate the sum. [3 marks]

Answer: 7680

Arithmetic Nth Term: 60

Arithmetic Series: 7680

Simplify: 7680

Worked example 2 | 2 marks

Catalog reference: adv_pem24_arithmetic_allowance_total | seed 41001 | mapping adv-m1-2

Increasing annual allowance

On a child's 10th birthday, an annual allowance of \$2000 begins. It increases by \$1000 each birthday.

(a) Find the total received up to and including the 18th birthday. [2 marks]

Answer: 54000

Inclusive Term Count: 9

Arithmetic Series Sum: 54000

Worked example 3 | 1 marks

Catalog reference: adv_pem23_q29b_seventh_geometric_term | seed 41001 | mapping adv-m1-3

Seventh geometric term

A positive geometric sequence begins with 6 and has ratio $\$1/\sqrt{2}\$$. Find its seventh term.

(a) Find the seventh term. [1 mark]

Answer: $3/4$

Geometric Sequence Term: $3\{s\}(1/\sqrt{2})^6\$$.

Source and methodology

Examples are deterministic curriq catalog generations from existing QDSL archetypes at the published fixed seed. The generator copies only student-facing prompts, mark allocations, topic mappings, display tables or options, checked answers and marking-path results into this resource.

Official syllabus source:

<https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-advanced-11-12-2024/overview/course>

Teacher verification note: check the mathematics, notation, permitted technology and syllabus fit for your cohort before classroom or assessment use.