



Year 12 Mathematics Advanced Assessment Task 2 – 2025

TOPICS: Sequences and Series, Curve sketching and applications, Integration	MARKS: 43
SUBMISSION REQUIREMENTS: Written test to be completed in class on Wednesday 26th March 2025 (Period 2)	WEIGHTING: 30% COMPONENTS: Concepts, Skills and Technologies 15% Reasoning and Communication 15%

TASK DESCRIPTION:

An in-class written test consisting of:

- 3 short answer questions on **Sequences and Series** totalling **15 marks** of the total marks
- 2 short answer questions on **Curve sketching and applications** totalling **13 marks** of the total marks
- 4 multiple choice and 5 short answer questions on **Integration** totalling **15 marks** of the total marks

Time allowed for the task will be **1 hour**.

A HSC (NESA) formula sheet will be provided.

No notes or books can be used during the exam.

Equipment required:

Calculator - Ruler - Pen - Pencil - Eraser

OUTCOMES TO BE ASSESSED:

MA12-3 Applies calculus techniques to model and solve problems.

MA12-4 Applies the concepts and techniques of arithmetic and geometric sequences and series in the solution of problems.

MA12-7 Applies the concepts and techniques of indefinite and definite integrals in the solution of problems.

MA12-10 Constructs arguments to prove and justify results and provides **reasoning** to support conclusions which are appropriate to the content.

Directional Verbs:

Apply – Use, utilise, employ in a particular situation

Reasoning - Action of thinking about something in a logical, sensible way

Construct – To build or make a case for

ASSESSMENT CRITERIA:

You will be marked on your ability to answer the questions correctly.

Show relevant mathematical working, reasoning and/or calculations.

You are encouraged to revise the following concepts learnt in class.

Sequences and Series	Curve sketching and applications	Integration
General sequences and series	Increasing and decreasing curves	Areas under a curve
Arithmetic sequences and series	Stationary points	Trapezoidal rule
Geometric sequences and series	Concavity and points of inflection	Definite integrals
Limiting sum of a geometric series	Interpreting rates of change	Indefinite integrals
	Application of second derivatives	Chain rule
	Curve sketching	
	Optimisation problems	