

Year 10 Advanced Mathematics

Task 1: Open Book In-Class Test

Due Date: 19th March 2025

Task Distributed: 5th March 2025

Unit: Linear Functions & Advanced Algebraic Techniques

Task Type: Open Book in Class Test


Task Weighting: 15%

Outcomes: MA5-LIN-C-02, MA5-LIN-P-01, MAO-WM-01, MA5-ALG-P-02

Task Description

Duration: 40 minutes

This exam will consist of two sections.

- **Section 1:** 5 multiple choice questions worth one mark each covering a range of the units listed above.
- **Section 2:** A mixture of short and long response questions worth one mark or more. This section will involve a number of literacy questions requiring you to write a short statement. These questions will be marked with the following symbol: 

Your knowledge, skills and understanding in the following areas can be assessed in this examination:

Advanced Algebraic Techniques	Linear Relationships
<ul style="list-style-type: none"> ● Simplify algebraic expressions ● Expanding and factorisation ● Binomial expansion ● Use factorising shortcuts (perfect squares and difference of two squares) ● Manipulate and simplify algebraic fractions 	<ul style="list-style-type: none"> ● Sketch straight line graphs using intercepts ● Derive equations of straight lines from given information ● Calculate gradients using the gradient formula ● Use properties of parallel and perpendicular lines ● Solve real world and coordinate geometry problems using features of linear relationships

As this is an examination you will need to prepare for this task by:

- Making one page summary notes of each topic listed above (mind map, flow chart, dot points).
- Accessing practice past papers.
- Regularly completing practice examination questions and formative tasks
- Seeking teacher assistance on unclear work.
- Ensuring all set work is up to date.

Assessment Procedures

All students should be fully aware of the School Assessment Procedures for their year group. These were provided at the beginning of the school year and are available on the school website under the Learning Tab for each year group.

NESA Glossary of Key Words

Understand the verb associated with the task. The verb will provide an understanding of the detail needed to successfully answer the question.

- **Calculate** - Provide a numerical answer
- **Evaluate** - Make a judgement based on criteria; determine the value of
- **Prove / Show** - Provide all algebraic steps and working in a logical sequence
- **Simplify** - Write an expression in its simplest form
- **Sketch** - Neatly draw a function on a number plane, clearly showing key features

Check the NESA Glossary of Key Words for further guidance

<https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/hsc/hsc-student-guide/glossary-keywords>

Details of Submission

For successful completion of this assessment, you must have the following equipment:

- Board approved calculator
- Pencil, eraser and ruler for graphs and diagrams
- Blue or black pen
- One A4 page of handwritten notes

Students are NOT permitted to bring any electronic device into the exam.

If you are absent from the examination you must contact the school on the day and follow school assessment and illness/misadventure policies and procedures. A valid attempt at all questions is required.

Teacher Feedback and Student Self-Reflection

- The task will typically be returned to students within 14 days of the due date.
- At this time feedback including information on how to improve will be provided through analysis of the examination questions as a class discussion. Explanation will be provided as requested.
- Students can clarify or seek further feedback by speaking with their teacher or the assessment marker.
- Upon return of the task, students will also be expected to complete a self-reflection. This will require students to review incorrect responses by seeking clarification from the teacher.

How does this link to my learning?

- The structure of the questioning style in this task will mirror that of the HSC examination.
- This task will be used by you and your teachers to assess your knowledge and understanding of course outcomes and allow you to refine your skills as you prepare for the HSC examination.
- This task will draw together the above outcomes and assess your ability to apply a range of mathematical skills and techniques that you have covered in class.