



## Year 12, Mathematics Extension 2

### Task 5: Trial HSC Exam

Due Date: 22<sup>nd</sup> August 2024

<b>Task Distributed:</b> 30 <sup>th</sup> July 2024	<b>Units:</b> All units except Mechanics
<b>Task Type:</b> Formal Examination	<b>Task Weighting:</b> 30%
<b>Outcomes:</b> <i>MEX12-1, MEX12-2, MEX12-3, MEX12-4, MEX12-5, MEX12-7, MEX12-8</i>	

### Task Description

You will have **3 hours with 10 minutes additional reading time** to complete this exam. A HSC Reference Sheet will also be provided. The examination consists of the following two compulsory sections:

- **Section 1: Multiple-Choice (10 marks).** This section contains 10 multiple-choice questions worth 1 mark each covering a range of the concepts listed in the Areas of Learning above. The questions increase in difficulty throughout this section. These must be answered on the blue multiple-choice answer provided. You should allow **15 minutes** to complete this section.
- **Section 2: Written Response (90 marks).** This section contains six questions with parts worth a total of 15 marks each. The focus of each question varies and combines the topics listed in the Areas of Learning. The parts of each question will be a mixture of questions worth 1 mark or more. You should allow **2 hours and 45 minutes** to complete this section. You need to complete your answers for each 15 mark question in a separate Answer Booklet provided. All necessary working must be shown for this section.

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

- Introduction to Complex Numbers
- Using Complex Numbers
- Further Proof by Mathematical Induction
- The Nature of Proof
- Integration
- Further Work with Vectors

**Harder Mathematics Extension 1 concepts can also be assessed in this examination.**

## 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
- **Demonstrate** - Show by example
- **Derive** - Use working to obtain a formula or equation
- **Evaluate** - Make a judgement based on criteria; determine the value of
- **Identify** - Recognise and name
- **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
- **Solve** - Use algebraic techniques to find a solution

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 examination you must bring the following equipment.

- Board approved calculator
- Pencils and eraser for graphs
- Blue or black pen
- A ruler

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

## 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 worked solutions and a literacy marking rubric.

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 when the tests are returned.

### How does this link to my learning?

- 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.
- The marks achieved in this exam will go towards your semester 2 report.
- 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.

## 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 off the school website under the Learning Tab for each year group.