



Year 11 Mathematics Extension 1

Task 2: Half Yearly Exam

Due Date: 8th May 2024

Task Distributed: 3rd April 2024

Unit: Polynomials, Linear, Quadratic & Cubic Functions, Function Notation

Task Type: Formal Examination

Task Weighting: 100% Report Mark

Outcomes: MA11.1, MA11.2, MA11.8, ME11.1, ME11.2, ME11.6, ME11.7

Task Description

Duration: 60 minutes

You will have 60 minutes, plus 10 minutes reading time to complete the examination

This exam will consist of two sections.

- **Section 1:** 10 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. Totalling 30 marks.

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

<p style="text-align: center;">Polynomials</p> <ul style="list-style-type: none">• Understand the definition, notation and terminology of a polynomial• Use long division to factorise a polynomial• Use and prove the remainder and factor theorems• Use properties of roots and coefficients to solve problems and equations• Understand and apply the multiplicity property• Sketch a range of polynomials	<p style="text-align: center;">Harder Linear, Quadratic and Cubic Functions</p> <ul style="list-style-type: none">• Sketching a range of linear, quadratic and cubic functions• Using properties of functions to solve problems• Solving linear and quadratic simultaneous equations by graphing and algebraically• Deriving the equation from a the properties or graph of a function• Solving variation problems involving linear, quadratic and cubic properties.
<p style="text-align: center;">Harder Function Notation</p> <ul style="list-style-type: none">• Use function notation• Define the domain and range of a function using interval notation• Identify a range of functions, relations and graphs• Identify and work with the sum, difference, product and quotient of functions	

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

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

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
- **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
- **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 assessment, you must have the following equipment:

- Board approved calculator
- Pencil, eraser and ruler for graphs and diagrams
- Blue or black pen

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 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. Additionally, students will be required to complete a survey in reflection of the examination.

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.

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.