

Task 2: Half Yearly Exam

Due Date: 1st May 2024

Task Distributed: 3rd April 2024

Units: Linear, Quadratic & Cubic Functions, and Function Notation

Task Type: Formal Examination

Task Weighting: 0% (100% Report Mark)

Outcomes: MA11-1, MA11-2, MA11-8, MA11-9

Task Description

Duration: 90 minutes

You will have 90 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.
- **Section 2:** A mixture of short and long response questions worth one mark or more.

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

<p style="text-align: center;">Linear Functions</p> <ul style="list-style-type: none"> • Recognise direct variation as a straight line • Explain the significance of the variables m and c in the equation $y = mx + c$ • Sketch straight line graphs using intercepts • Derive equations of straight lines from a gradient and a given point • Calculate gradients using the gradient formula • Use properties of parallel and perpendicular lines • Solve linear simultaneous equations by graphing and algebraically 	<p style="text-align: center;">Quadratic Functions</p> <ul style="list-style-type: none"> • Recognize graphical features of a quadratic function • Determine properties of quadratic functions • Solve quadratic equations • Understand the discriminant • Find the equation of a quadratic • Solve problems involving modelling and analysing quadratic functions • Solve practical problems involving simultaneous equations • Recognise cubic functions and the effect of changing constant values within the equation
<p style="text-align: center;">Function Notation</p> <ul style="list-style-type: none"> • Define functions, relations and ordered pairs • Use function notation • Define independent and dependent variables • Define the domain and range of a function using interval notation 	<ul style="list-style-type: none"> • Identify a range of functions, relations and graphs • Use the Vertical Line Test • Understanding function terminology (one-to-one) • Identify and work with the sum, difference, product and quotient of functions • Identify and work with composite functions

You are expected to be able to perform algebraic techniques, including surd operations, as part of this exam.

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.
- Regularly completing weekly formative tasks

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.