Gymea Technology High School
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Year 12, Mathematics Advanced

Task 4: In Class Test

Due Date: Thursday 13th June Period 4 (Week 7A)

Task Distributed: 30th May 2024	**Units**: Applications of Derivatives and The Anti Derivative
Task Type: In Class Test	**Task Weighting**: 25%
Outcomes: MA12-1, MA12-3, MA12-5, MA12-7, MA12-9	

Task Description

You will have **45 minutes** to complete this exam. 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 that require working out as part of the solution.

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

Applications of Derivatives	Anti Derivative (Integration)
• Use the first and second derivatives to determine shape and turning points of functions • Use calculus to determine global maxima and minima as well as points of inflection. • Sketch functions displaying critical values as $x \to \infty$ and $x \to -\infty$ • Solve optimisation problems for any function in the scope of the syllabus	• Approximate areas under the curve using the trapezoidal rule • Find definite and indefinite integrals • Find areas enclosed between a curve and either x or y axis • Find areas enclosed between two curves and either x or y axis

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/Evaluate -** Determine the value of
- **Prove / Show -** Provide all steps and working in a logical sequence to get to a given answer
- **Simplify** - Write an expression in its simplest form
- **Solve -** Use algebraic techniques to find a solution
- **Justify –** Use mathematical reason to make judgement on something

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 in class 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