

**YEAR 12 MATHEMATICS
ASSESSMENT TASK
TERM 2, WEEK 6, 2010**

Date: Wednesday, 26th May

Marks: 100%

Time Allowed: 1 period

Weighting: 10%

Outcomes Addressed

- Applies appropriate techniques from the study of series and sequences to solve problems.
- Uses techniques of integration to calculate areas.
- Finds definite and indefinite integrals.

Integration

- Using trapezoidal rule and Simpson's rule to approximate an area under a curve.
- Finding definite integrals.
- Finding definite integrals including using the function of a function rule.

Series and Sequences

- Using sigma notation (Σ) to evaluate the sum of a series.
- Finding the terms of an arithmetic series, including the n -th term.
- Finding the sum of an arithmetic series.
- Finding the first term and common difference from an arithmetic series.
- Finding the first term and the common ratio of a geometric series.
- Finding the n -th term and the sum of a geometric series.
- Finding the limiting sum (sum to infinity) of a geometric series.
- Problems involving arithmetic and geometric series.
- Problems involving superannuation.

Instructions

- Attempt all questions
- Show all necessary working
- Write in blue pen, black pen or dark pencil
- Approved calculators may be used

NOTE:

- Students who do not achieve the outcome (less than 39%) in this assessment task will receive an 'Official Warning' – non completion of the HSC course.
- Students will be required to re-sit the task within 7 days.
- Students will be given 2 further opportunities to achieve the required outcome.
- Failure to achieve the outcome may result in the student receiving an 'N' determination.