

**YEAR 12 MATHEMATICS  
ASSESSMENT TASK  
TERM 3, WEEK 2, 2010**

**Date: Wednesday, 28<sup>th</sup> July**

**Marks: 100%**

**Time Allowed: 1 period**

**Weighting: 10%**

**Outcomes Addressed**

- Uses techniques of integration to calculate areas and volumes.
- Manipulates and uses techniques of calculus with logarithmic and exponential functions.

Integration

- Use integration to find areas and volumes between curves and the  $x$  and  $y$  axes.
- Use integration to find the area between two curves.

Exponential and Logarithmic Functions

- Sketch both exponential and logarithmic functions, giving domain and range of both.
- Differentiate and integrate exponential and logarithmic functions.
- Find the equations of tangents to exponential and logarithmic curves.
- Find the areas under exponential and logarithmic curves.

Circular Measurement

- Convert degrees to radians and radians to degrees.
- Calculate the arc length, area of a sector and area of a minor segment.

**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.