

YEAR 12 EXTENSION 2

ASSESSMENT TASK

TERM 1, WEEK 5, 2010

Date: Wednesday, 24th February

Marks: 100%

Time Allowed: 1 period

Weighting: 10%

Outcomes Addressed

- Combines the ideas of algebra and calculus to determine the important features of the graphs of a wide variety of functions
- Uses the relationship between algebraic and geometric representations of Conic Sections

Graphing

- Graph a function by first finding stationary points, points of inflexion, intercepts, asymptotes and other relevant facts
- Given $y = f(x)$ sketch the curves $y = |f(x)|$, $y = [f(x)]^2$, $y = \frac{1}{f(x)}$, $y = \sqrt{f(x)}$ and other related functions

Conics

- Find the foci, directrices and intercepts of an ellipse and use this to sketch the graph of the ellipse
- Find the foci, directrices, intercepts and asymptotes of a hyperbola and use this to sketch the graph of the hyperbola
- Graph Conjugate Hyperbolas and Rectangular Hyperbolas
- Write down the parametric equations of both the ellipse and the hyperbola

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.