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# VCE UNITS INFORMATION

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## VCE Mathematics – Specialist Mathematics Units 3 and 4

### CONTENT

#### Units 3 and 4

Specialist Mathematics Units 3 and 4 consist of the areas of study: ‘Functions and Graphs’, ‘Algebra’, ‘Calculus’, ‘Vectors’, ‘Mechanics’ and ‘Probability and Statistics’. The course content highlights mathematical structure, reasoning and applications across a range of modelling contexts.

Specialist Mathematics Units 3 and 4 assumes familiarity with the key knowledge and skills from Mathematical Methods Units 1 and 2, the key knowledge and skills from Specialist Mathematics Units 1 and 2 topics ‘Number Systems and Recursion’ and ‘Geometry in the Plane and Proof’, and concurrent or previous study of Mathematical Methods Units 3 and 4.

In undertaking these units, students are expected to be able to apply techniques, routines and processes involving rational, real and complex arithmetic, sets, lists and tables, diagrams and geometric constructions, algebraic manipulation, equations, graphs, differentiation, anti-differentiation and integration and inference with and without the use of technology.

### OUTCOMES

For each unit, the student is required to demonstrate achievement of three outcomes. As a set these outcomes encompass all of the selected areas of study for each unit. For each of Unit 3 and Unit 4 the outcomes as a set apply to the content from the areas of study and topics selected for that unit.

- Students should be able to define and explain key concepts in relation to the topics from the selected areas of study, and apply a range of related mathematical routines and procedures
- Students should be able to apply mathematical processes in non-routine contexts, and analyse and discuss these applications of mathematics
- Students should be able to select and appropriately use numerical, graphical, symbolic and statistical functionalities of technology to develop mathematical ideas, produce results and carry out analysis in situations requiring problem-solving, modelling or investigative techniques or approaches