## DRAFT PERFORMANCE BANDS

### MATHEMATICS EXTENSION 2

*The typical performance in this band:*

<table>
<thead>
<tr>
<th>Band</th>
<th>Description</th>
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| **Band E4** | - Exhibits mastery of most aspects of the Mathematics, Mathematics Extension 1 and Mathematics Extension 2 courses  
- Synthesises mathematical techniques, results, and ideas creatively across the Mathematics, Mathematics Extension 1 and Mathematics Extension 2 courses to solve problems  
- Combines excellent algebraic and modelling skills, multi-step logic and mathematical insight to solve difficult problems  
- Constructs proofs in an abstract setting  
- Communicates sophisticated mathematical ideas and relationships using the algebraic, diagrammatic and graphical techniques of mathematics, concise notation and clear logical argument |
| **Band E3** | - Exhibits facility with the techniques of the Mathematics, Mathematics Extension 1 and Mathematics Extension 2 courses  
- Solves problems from the Mathematics Extension 2 topic areas, such as complex numbers, volumes, polynomials, conics and mechanics  
- Successfully graphs a wide variety of functions showing critical points, asymptotes and points of inflexion without necessarily using calculus  
- Demonstrates a sound grasp of both algebraic and geometric techniques required to solve problems  
- Communicates mathematical ideas and relationships using the algebraic, diagrammatic and graphical techniques of mathematics, appropriate notation and logical argument |
| **Band E2** | - Exhibits knowledge of the techniques of the Mathematics, Mathematics Extension 1 and Mathematics Extension 2 courses  
- Solves standard problems from the Mathematics Extension 2 topic areas such as integration and complex numbers  
- Graphs a wide variety of functions showing many features without necessarily using calculus  
- Applies calculus and other appropriate ideas to model practical problems  
- Communicates effectively using mathematical language, notation, diagrams and graphs |
| **Band E1** | - |