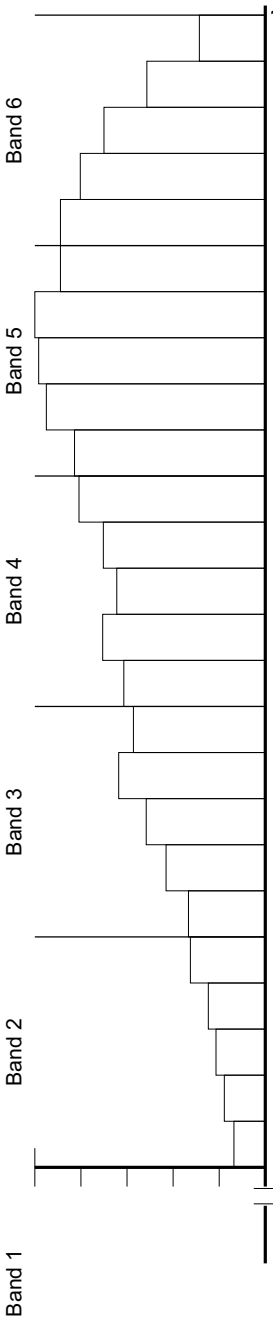
2017 Course Report

Mathematics

State Distribution | **The typical performance in this band:**



100

Exhibits extensive knowledge and skills appropriate to the Mathematics course. Uses sophisticated multi-step reasoning. Integrates ideas of calculus with strong algebraic, deductive and modelling skills to successfully solve difficult problems. Exhibits excellent problem solving skills. Communicates effectively using appropriate mathematical language, notation, diagrams and graphs.

90

Exhibits sound knowledge and skills appropriate to the Mathematics course. Uses multi-step logical reasoning in both numerical and theoretical contexts such as problems in calculus, geometry and probability. Combines ideas of calculus with algebraic, deductive and modelling skills to successfully solve many difficult problems. Exhibits a wide range of problem solving skills such as applications of series. Communicates effectively using mathematical language, notation, diagrams, and graphs.

80

Exhibits the manipulative skills and knowledge base appropriate to the Mathematics course. Uses logical reasoning in both numerical and theoretical contexts such as problems in calculus and geometry. Identifies appropriate approaches to the solution of difficult problems. Uses calculus and other methods to determine the features of, and to graph, a wide range of functions. Successfully applies calculus and other appropriate ideas to model practical problems. Communicates using mathematical language, notation, diagrams and graphs.

70

Consistently applies arithmetic and algebraic procedures correctly. Applies geometrical reasoning in a numerical context. Graphs functions such as 3sin 2x, and simple logarithmic and exponential functions. Consistently applies rules of differentiation and basic integration correctly. Uses calculus to determine the features of, and to graph, functions such as cubic polynomials. Solves simple problems involving series.

60

Correctly applies arithmetic and basic algebraic procedures. Recalls many of the formulae and algorithms appropriate to the Mathematics course, such as Simpson's rule, the sine rule, and the cosine rule. Graphs simple functions such as linear functions, quadratics, sin x and cos x. Finds derivatives of basic functions such as polynomials and sin x. Uses the rules of differentiation such as the product rule. Solves numerical problems involving the geometry of triangles.

50

A mark in this band indicates that the student has achieved below the minimum standard expected.

0

The candidature of this course was 17,060.