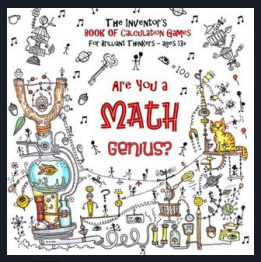
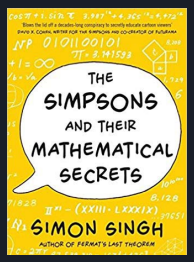
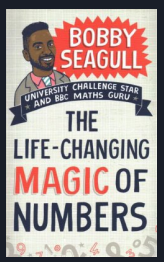
Summer Y10–Y11

Additional Mathematics







Polynomials

Addition, subtraction, multiplication and division of polynomials. The factor theorem. Quadratic equations

Sequences

Sequences and recurrence relationships.

Points, lines and circles

The line joining two points. The coordinate geometry of circles.

Trigonometric Functions

Trigonometric functions for angles of any size. Sine and cosine rules. Identities involving sin, cos and tan. Using trigonometrical identities to solve equations.

Applications of trigonometry

Applications in modelling. Working in three dimensions

Binomial distribution

Binomial expansion. The binomial distribution.

Numerical Methods

Locating a root of an equation. Improving a root. Iterative sequences. Gradients of tangents. Area under a curve. Applications of numerical methods

Differentiation

Differentiation. The gradient of a curve. Stationary points.

Integration

The rule for integrating x^n where n is a positive integer. The integral notation. Definite integrals. Area between a curve and the x axis. Areas below the x axis. The area between two curves.

Applications of equations and inequalities in one variable

Applications of equations, solving linear and quadratic inequalities.

Linear inequalities in two variables

Illustrating linear inequalities in two variables. Using inequalities for problem solving. Linear programming

Permutations and combinations

Probability diagrams. Factorials and product rule. Permutations and combinations

Exponentials and Logarithms

Properties of the exponential function. Logarithms. Reduction to linear form. Equations involving exponentials

Application to Kinematics

Motion in a straight line. Acceleration due to gravity. Finding displacement from velocity

2024-25