

Category 4 Topics

Sets Theory	Sets and their representations, practical problems based on sets
Sequences and Series	Arithmetic sequences and series, the general term of an arithmetic sequence, sum of n terms of an arithmetic sequence, Arithmetic Mean (A.M.), geometric sequences and series
Trigonometry	Pythagoras' theorem(review), right angled triangle trigonometry, finding sides and angles, problem-solving using trigonometry, radian measure and periodic properties of circles, the unit circle, the basic trigonometric ratios, the equation of a straight line, areas of triangles
Probability and Statistics	Types of data, grouped data, organization, and display of numerical data, cumulative frequency tables and graphs, measuring the central tendency of data, measuring the spread of data, outliers, standard deviation, scatter plots, correlation, line of best fit. interpolation, extrapolation
Plane and Space Geometry	Cartesian plane, ordered pairs, slope of a line and angle between two lines, equation of family of lines passing through the point of intersection of two lines, standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle
Relations and Functions	Ordered pairs, Cartesian product of sets, number of elements in the Cartesian product of two finite sets, Cartesian product of the sets of real numbers, definition of relation, pictorial diagrams, domain, co-domain and range of a relation, pictorial representation of a function, domain, co-domain and range of a function
Logarithmic and Exponential Forms, Radical Expressions and Equations	Index notations, evaluating powers, index laws, rational indices, algebraic expansion and factorization, exponential equations, graphs of exponential functions, the natural exponential "e", logarithms, logarithms in base 10, laws of logarithms
Mental Math and Brain Teasers	Analytical and critical thinking questions