

Higher Maths Distance Scheme of Learning

This scheme is designed to be used alongside the course textbook you have been issued.

Unit 1

Straight Line

Straight Line Introduction

Collinearity and gradient of perpendicular lines

Equation of a Straight Line

Medians

Altitudes

Perpendicular Bisectors

Intersections of Lines

Functions

Functions Introduction

Composite Functions

Inverse Functions

Logarithmic and Exponential Graphs

Graph Transformations

Trig Equations

Revision of N5 Trig

Radians

Exact Values

Solving Trig Equations

Recurrence Relations

[Finding a Recurrence Relation for a Sequence](#)

[Limit of a Sequence](#)

[Linear Recurrence Relations](#)

Differentiation

[Introduction to Differentiation](#)

[Differentiating more complex terms](#)

[Differentiating with respect to other variables](#)

[Rate of Change](#)

[Tangent to a Curve](#)

[Differentiating \$\sin x\$ and \$\cos x\$](#)

[Chain Rule](#)

[Increasing and Decreasing Curves](#)

[Stationary Points](#)

[Curve Sketching](#)

[Closed Intervals](#)

[Graphs of Derived Functions](#)

Unit 2

Polynomials

[Synthetic Division](#)

[Finding Unknown Coefficients](#)

[Intersection of a Line and a Curve](#)

[Determining the Equation of a Curve](#)

Quadratic Theory

[The Discriminant](#)

[Completing the Square](#)

[Sketching Parabolas](#)

[Finding the Equation of a Parabola](#)

[Solving Quadratic Inequalities](#)

[Intersection of a Line and a Parabola](#)

Integration

[Indefinite Integrals](#)

[Preparing for Integration](#)

[Differential Equations](#)

[Definite Integrals](#)

[Integrating \$\sin x\$ and \$\cos x\$](#)

[Chain Rule for Integration](#)

[Chain Rule with Trig](#)

Addition Formulae

[Compound Angles](#)

[Double Angle Formulae](#)

[Further Trig Equations](#)

Wave Function

[Expressing \$p \cos x + q \sin x\$ in the form \$k \cos\(x - a\)\$ \(1\)](#)

[Expressing \$p \cos x + q \sin x\$ in the form \$k \cos\(x - a\)\$ \(2\)](#)

[Expressing \$p \cos x + q \sin x\$ in other forms](#)

[Multiple Angles](#)

[Minimum and Maximum Values](#)

[Solving Equations](#)

[Sketching Graphs of the form \$y = p \cos x + q \sin x\$](#)

The Circle

[Representing a Circle](#)

[The General Equation of a Circle](#)

[Intersection of a Line and a Circle](#)

[Tangent to a Circle](#)

[Equation of a Tangent](#)

[Intersections of Circles](#)

Further Calculus

[Optimisation](#)

[Further Optimisation](#)

[Area Above and Below the x-axis](#)

[Area Between Two Curves](#)

Vectors

[Vectors Introduction](#)

[Position Vectors and Collinearity](#)

[Section Formula/Dividing Lines in a Ratio](#)

[Scalar/Dot Product](#)

[Angle Between Two Vectors](#)

[Perpendicular Vectors](#)

[Properties of the Scalar Product](#)

Logs & Exponentials

[Laws of Logs](#)

[Logarithmic Equations](#)

[Exponential Equations](#)

[Exponential Growth and Decay](#)

[Graphing with Logarithmic Axis](#)

[Graph Transformations](#)