Y10 End of Year Exam Preparation: *Further Maths*

Exam(s):

Exam 1: Non-calculator - 60 minutes
Exam 2: Calculator - 60 minutes

Revision Topic List - Paper 1	
Content	**Skills**
• **Number**	• **The product rule for counting** • **Fractions, decimals, percentages, ratio, proportion and order of operations** • **Manipulation of surds, including rationalising the denominator**
• **Algebra**	• **Know the definition of an identity** • **Domain and range of a function** • **Composite and inverse functions** • **Expanding brackets and collecting like terms** • **Binomial expansion (and Pascal's)** • **Factorising (inc completing the square)** • **Drawing, sketching and interpreting functions/graphs** • **Algebraic fractions** • **Rearranging formulae** • **Use of the factor theorem and dividing polynomials** • **Solution of linear and quadratic equations** • **Solving linear inequalities** • **Index laws, including fractional and negative indices**
• **Coordinate geometry**	• **Equation of a straight line and parallel / perpendicular lines** • **Use Pythagoras' theorem to calculate the distance between two points** • **Use ratio to find the coordinates of a point on a line given the coordinates of two other points**
• **Calculus**	• **Know that the gradient function gives the gradient of a curve and**

	measures the rate of change of y with respect to x • Differentiate a function • The equation of a tangent and normal at any point on a curve • Increasing and decreasing functions • Understand and use the notation $\frac{d^2y}{dx^2}$ • Use of differentiation to find maxima, minima and points of inflection
• Trigonometry	• Use of Pythagoras' theorem in 2D and 3D • Be able to apply trigonometry and Pythagoras' theorem to 2 and 3 dimensional problems

Tips on different revision techniques, including subject specific activities can be found in the Student Study Support Guide.