GCSE Maths HIGHER
Revision List for Calculator Papers 2 & 3 2019

Here is a list of what is likely to come up on the calculator papers 2 and 3, based on what was on the first paper. Make sure you have your calculator and you know how to use it!

Number

- ✓ Standard form
- ✓ Fractions of an amount
- ✓ Converting between fractions decimals and percentages
- ✓ **Reciprocals**
- ✓ **Prime factorisation** including HCF and LCM
- ✓ Converting **recurring decimals** to fractions
- ✓ **Reverse Percentages**
- ✓ **Compound interest** and **depreciation**
- ✓ **Upper and lower bounds** (incl. error intervals)
- ✓ **Speed / Distance / Time**
- ✓ **Mass / Density / Volume**
- ✓ Converting between currencies and measures
- ✓ Surds (incl. simplifying, rationalizing the denominator)
- ✓ Growth and decay problems

Algebra

- ✓ Expanding brackets (incl. **triple brackets**)
- ✓ **Laws of indices**
- ✓ **nth term** of a linear or quadratic sequence
- ✓ Factorising by taking out a common factor
- ✓ **Factorising Quadratics**
- ✓ Solving quadratic equations using the **quadratic formula**
- ✓ Solving **simultaneous equations** (including where one is quadratic)
- ✓ **Straight line graphs** (plotting, midpoints, gradients, $y = mx + c$)
- ✓ **Graphs of curves** (quadratic, cubic, reciprocal or exponential)
- ✓ Representing **inequalities on a graph**
- ✓ Solving inequalities (including **quadratic inequalities**)
- ✓ **Changing the subject of a formula** where variable occurs twice
- ✓ Coordinate geometry of a circle ($x^2 + y^2 = \text{radius}^2$)
- ✓ Equations of tangents to a circle
- ✓ Solving equations containing algebraic fractions
- ✓ **Iterations**
- ✓ **Real life graphs** (including distance-time or velocity-time)
- ✓ **Estimating the gradient of a curve using a tangent**

- ✓ Estimating the **area under a curved graph**

Geometry

- ✓ Area and perimeter of 2D shapes (rectangles, triangles, parallelograms and trapeziums)
- ✓ **Circle formulas** including area, circumference, arc length and sectors
- ✓ Converting units for length, area and volume
- ✓ Using **angle facts** to solve problems including **angles in regular polygons**
- ✓ **Rotations and enlargements** including fractional or negative scale factors
- ✓ **Pythagoras' Theorem** (including in 3D)
- ✓ **Bearings**
- ✓ Scale drawings
- ✓ Constructions (incl. triangles, perpendiculars and bisectors)
- ✓ **Loci**
- ✓ **Similar Shapes** including similar areas and volumes
- ✓ Proving triangles are mathematically similar
- ✓ Proving triangles are congruent
- ✓ **Volume** and surface area **of a prism**, cylinder, cone, sphere, frustums, etc.
- ✓ **Trigonometry** in right angled triangles (**SOHCAHTOA**)
- ✓ **Sine rule, cosine rule** and **area of a triangle** using ½absinC
- ✓ Proofs of circle theorems
- ✓ Vector notation (incl. addition, subtraction and magnitude)
- ✓ Proofs involving **vectors**

Handling Data

- ✓ **Scatter graphs**
- ✓ **Mean**, mode, median, range **from frequency tables**
- ✓ Stem and leaf diagrams including back-to-back diagrams
- ✓ Pie charts
- ✓ Time-series graphs (identifying trends)
- ✓ Two-way tables
- ✓ Frequency trees
- ✓ **Frequency polygons**
- ✓ **Histograms** including finding the median from a histogram
- ✓ **Cumulative frequency curves** (incl. estimating the median and interquartile range)
- ✓ Stratified sampling
- ✓ Calculating probabilities
- ✓ **Relative frequency** (experimental probability)
- ✓ Conditional Probability (Probability trees without replacement)
- ✓ **Venn diagrams** and **set notation**
- ✓ **Capture-recapture**

GOOD LUCK!!