

## Revision Topics for Year 11 Higher PPE2 - February 2024

Sources for revision help: Sparx Maths, Corbettmaths and onmaths.com are full of videos, practice questions and self-marking exam papers.

You will need full maths equipment including protractor and compasses as well as a Casio Scientific calculator with natural display. The Casio FX-83GTCW, FX-85GTCW, or FX991-CW are best.

| Paper 1 – Non-Calculator   |                  | Paper 2 - Calculator  |                        | Paper 3 - Calculator  |            |
|--|------------------|---|------------------------|---|------------|
| Topic  | Sparx Code       | Topic   | Sparx Code             | Topic   | Sparx Code |
| Multiply decimals.   | U293             | Expand brackets and simplify the resulting expression.                                | U179                   | Convert numbers between standard and ordinary form.   | U330, U534 |
| Evaluate calculations using index laws.  | U235, U694       | Factorise an expression to a single bracket.  | U365                   | Calculate an estimate for the number of times an event will occur using relative frequency.         | U166       |
| Simplify calculations using index laws.  | U235, U694       | Change the subject of a formula.  | U556                   | Calculate the estimate for the mean.  | U877       |
| Express a number as a product of prime factors.                                      | U739             | Calculate percentage profit.  | U278                   | Identify the median from a frequency table.   | U569       |
| Find the HCF and LCM of two or more numbers.   | U250             | Calculate compound interest.  | U332                   | Use inequalities represented on a number line.  | U509       |
| Calculate a missing value given the mean.  | U291             | Solve a linear equation with unknowns on both sides of the equality symbol.           | U870                   | Solve a linear inequality.  | U759, U738 |
| Construct a perpendicular line.  | U245             | Solve a ratio problem.  | U577                   | Solve a HCF/LCM problem.  | U250       |
| Solve a geometric problem including a ratio.   | U655             | Calculate bearings.   | U107                   | Solve an inverse proportion problem.  | U357       |
| Set up and solve simultaneous equations.   | U137             | Calculate the volume of a cylinder.   | U915                   | Calculate with speed, distance, and time.   | U151       |
| Calculate the value of an item before a percentage change.                           | U286             | Error intervals.  | U657                   | Calculate with force, pressure, and area.   | U527       |
| Draw and interpret a real-life graph from a ratio.                                   | U652, U638       | Expand three brackets.  | U606                   | Find the equation of a straight line.   | U315       |
| Calculate the circumference and area of a circle.                                    | U604, U950       | Complete a probability tree with dependent events.                                    | U729                   | Change the subject of a formula.  | U556       |
| Complete and interpret a box plot.   | U879, U837       | Calculate probability.  |                        | Use a scale and convert metric units of measure.  | U257       |
| Given the equation of a straight line, find equation of a perpendicular line.        | U898             | Identify proportionality graphs.  | U238                   | Calculate an angle given the area of a sector.  | U373       |
| Use similarity in 3D shapes with volume, area and linear scale factors.              | U110             | Calculate the midpoint of a line segment.   | U933                   | Interpret a cumulative frequency graph to find specific values, the median and interquartile range. | U642       |
| Evaluate a calculation using negative and fractional index laws.                     | U694, U985, U772 | Use Pythagoras with coordinates.  | U385                   | Find the $n$ th term of a quadratic sequence.   | U206       |
| *Estimate the gradient of a curve.   | U800             | Convert a recurring decimal to a fraction.  | U689                   | Show similarity in 2D shapes.   | U578       |
| Rearrange a formula and substitute values.   | U556             | Find equations for variables in direct and inverse proportion.                        | U640, U407, U364, U138 | Calculate probability of mutually exclusive events.   | U683       |
| Factorise a quadratic expression with a coefficient of $x^2$ that is greater than 1. | U858             | Draw and interpret histograms.  | U814                   | Complete the square on a quadratic expression and find the turning point.                           | U397       |
| Solve a quadratic inequality.  | U133             | Calculate the median from a histogram.  | U983                   | Solve a quadratic equation.   | U665       |
| Calculate probability of mutually exclusive events.                                  | U683             | Use non-right angled trigonometry to find missing lengths and the area of a triangle. | U592, U952, U591       | Enlarge shapes by negative and fractional scale factors.  | U134       |
| Interpret a trigonometric graph.   | U450             | Show that an equation has a solution between two values.                              |                        | Complete a combination of transformations.  | U766       |
| Interpret a transformed trigonometric graph.   | U455             | Rearrange a formula.  |                        | Calculate the volume of a frustum and hemisphere.   | U350, U617 |
| Use non-right angled trigonometry to find a missing angle.                           | U591, U627       | Use iteration to solve an equation.   | U556                   | Find a coordinate of a transformed function.  | U455       |
| Draw the graph of a circle.  | U567             | Complete geometric proofs using vectors.  | U434, U168, U560, U781 | Sketch the graph of a transformed function.   |            |
| Solve simultaneous equations graphically.  | U836             | Calculate the value of a composite and inverse function.                              | U895, U448, U996       | Use circle theorems to find a missing angle.  | U808       |
| Identify the common ratio of a geometric sequence.                                   | U958             | Simplify and complete operations to simplify algebraic fractions.                     | U695, U457, U824       | Calculate with bounds.  |            |
|  |                  | Write and solve equations with algebraic fractions.                                   | U228, U960             | Rearrange formulae.   | U657       |
|  |                  |   |                        | Write fractions as ratios.  | U556       |
|  |                  |   |                        | Use Pythagoras' theorem and trigonometry in 3D.   | U541, U170 |