Testbourne Community School

Year 10 End of Year Mathematics 'Mock' Assessment (H) Revision List

Non-Calculator Paper – Paper 1 (2025) 1h 30minutes

- Expand single brackets in algebra E.g. x(x+8), 2x(3x-2)
- Understand numbers written in standard form and as powers of ten and be able to convert them to ordinary numbers and ordinary numbers to standard form. E.g. The number in standard form 6.15×10^3 is equal to 6150. 175.03×10^6 is not in standard but it is equal to 175030000
- Be able to write one number as a fraction of another, including decimals and decimals less than one and convert them to ordinary whole number fractions.
- Calculate simple probability problems (using sample space diagrams as necessary) giving answers as fractions, decimals or percentages and be able to comment on which outcomes are more likely based on the results.
- Solve worded speed, distance, time problems knowing that D = S X T, T = D ÷S and S = D ÷T and understand average speed for a whole journey.
- Know whether a calculation will give a positive or negative result by knowing that a - x - = + , + x - = - , - x + = - and - ÷ - = + , + ÷ - = - , - ÷ + = -
- Solve proportion and ratio problems in context. E.g. a solution is made from 3 parts water and 2 parts paint, how much paint can be made if I have an endless supply of water but only 40 litres of paint?
- Solve problems related to repeated percentage change (increasing and decreasing).
- Understand and plot cumulative frequency graphs and box plots including how to find the median and interquartile range. Know what percentages of the population are above and below the upper and lower quartiles and represented by the interquartile range.
- Complete Venn diagrams given information in words.
- Solve problems involving expanding double brackets. E.g. (5x + 4)(x -6).
- Covert any recurring decimal to an exact fraction.
- Know circle theorems and solve circle theorem problems.
- Solve linear equations involving the unknown on both side, where brackets are included and where one side is a fraction. E.g. 3x + 4 = 22, 5x + 20 = 6x -5, $\frac{6x + 12}{4} = 2(x - 2)$
- Simplify algebraic expressions involving indices using the rules of indices where powers need to be added or subtracted.
- Know that when you have a power to a power E.g. $(P^2)^3$ indices are multiplied to give P^6
- Solve problems related to interior and exterior angles in polygons knowing that the sum of all of the exterior angles is 360°, interior + exterior angles add to 180°and that the sum of the interior angles of any polygon is 180 x (n-2) where n is the number of sides of the polygon.
- Work out the upper and lower limits (bounds/error interval) for numbers that have been rounded to a given degree of accuracy. E.g. If 123.4 minutes is given as a time after being rounded to nearest tenth of a minute then the error interval is $123.35 \leq t < 123.45$
- Find and use the nth term rule for linear sequences and patterns.
- Solve inequalities and represent inequalities on a graph.
- Solve identities by equating coefficients.

Turn over

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Calculator Paper – Paper 2 (2025) 1h 30minutes

- Solve problems involving the area of circles and compound shapes including circles, including shaded areas.
- Give answers to circle area based problems in terms of PI.
- Work out a stratified sample for a given set of data appreciating that a stratified sample is a sample where the number selected from each group within the population is in proportion to the size of the group.
- Solve quadratic equations using factorising E.g. solve $x^2 – 3x – 4 = 0$. To include those where rearranging is required.
- Rearrange (change the subject of a formula) including where the subject appears twice.
- Recognise and describe fully transformations including rotations, reflection, enlargements and translations.
- Be able to transform shapes using rotations, reflection, enlargements and translations including enlargements where the scale factor is negative or a fraction less than 1.
- Recognise congruent shapes
- Calculate volume and surface area of prisms, cones, spheres and pyramids substituting into formula as necessary.
- Solve problems involving areas of 2D shapes and surface areas and volumes of 3D shapes such as prisms including cylinders. Where the area and volume are given, be able to calculate properties such as length, height and radius of the shapes.
- Solve linear simultaneous equations including being able to form the equations from a situation described in words.
- Construct and interpret pie charts.
- Solve vector geometry problems.
- Construct and use Histograms.
- Solve problems in right angle triangles using trigonometry SOHCAHTOA including in 3D shapes.
- Use Pythagoras Theorem to solve problems including in 3D shapes.
- Simplify and evaluate indices including numbers with negative and fractional indices.
- Solve problems involving similar shapes finding missing shapes and understand that similar shapes have angles that are the same.
- Solve problems in similar shapes knowing how enlargements change areas and volumes. E.g. If the length scale factor is x then the area scale factor is x^2 and the volume scale factor is x^3.
- Carry out calculations with the compound measures of force, pressure, area and density, mass and volume.

Essential equipment
Black pens, pencils, rubber, ruler, protractor, pair of compasses and a calculator for Paper 2.

Working out and quality of written communication
Students are required to present their full working out for all questions and to answer questions in a clear manner that is easy to follow.

Revision materials
In addition to any revision PowerPoints and Revision booklets that will be made available the following websites may be useful for revision including CGP Books GCSE Maths AQA Revision Guides and Workbooks for the Mathematics Grade 9-1 Course. Maths Genie • Learn GCSE Maths for Free, Videos and Worksheets – Corbettmaths https://www.cgpbooks.co.uk