

# Mathematics Mock Examination

## Advance Information – HIGHER TIER

### Paper 1 – Friday 2<sup>nd</sup> June

|  |
|--|
| Number   |
| <ul style="list-style-type: none"> <li>▪ Prime Factors, HCF and LCM</li> <li>▪ Fractions</li> <li>▪ Fractional and Negative Indices</li> <li>▪ Multiplication and Division</li> <li>▪ Factors and Multiples</li> </ul>   |
| Algebra  |
| <ul style="list-style-type: none"> <li>▪ Drawing other graphs: Cubic/Reciprocal</li> <li>▪ Simultaneous Equations</li> <li>▪ Proof</li> <li>▪ Algebraic Fractions</li> <li>▪ <i>Geometric Sequences</i></li> </ul>   |
| Geometry & Measures  |
| <ul style="list-style-type: none"> <li>▪ Area and Perimeter</li> <li>▪ Transformations</li> <li>▪ Sector Areas and Arc Length</li> <li>▪ Circle Theorems</li> <li>▪ Trigonometric and Exponential Graphs</li> <li>▪ Exact Trig Values</li> <li>▪ The Sine Rule</li> <li>▪ <i>Volume and Surface Area of Spheres and Cones</i></li> </ul> |
| Statistics   |
| <ul style="list-style-type: none"> <li>▪ Histograms</li> </ul>   |
| Probability  |
| <ul style="list-style-type: none"> <li>▪ Probability</li> <li>▪ Conditional Probability</li> </ul>   |
| Ratio & Proportion   |
| <ul style="list-style-type: none"> <li>▪ Direct and Inverse Proportion</li> <li>▪ <i>Combining Ratios</i></li> <li>▪ Writing a Ratio as a Fraction or Linear Function</li> <li>▪ Speed and Density</li> <li>▪ Fractions, Decimals and Percentages</li> </ul>   |

**Paper 2 – Wednesday 21<sup>st</sup> June**

|  |
|--|
| Number   |
| <ul style="list-style-type: none"><li>▪ Recurring decimals to fractions</li><li>▪ Bounds</li></ul>   |
| Algebra  |
| <ul style="list-style-type: none"><li>▪ Sequences (Nth term)</li><li>▪ Solving equations</li><li>▪ Drawing Quadratic graphs</li><li>▪ Parallel and Perpendicular Lines</li><li>▪ Solving quadratics</li><li>▪ Inverse &amp; Composite Functions</li><li>▪ Velocity Time Graphs</li><li>▪ Perpendicular lines and the equation of a tangent</li></ul>   |
| Geometry & Measures  |
| <ul style="list-style-type: none"><li>▪ Plans &amp; Elevations</li><li>▪ Area of compound shapes</li><li>▪ Sector Area and Arc Lengths</li><li>▪ SOH CAH TOA (Trigonometry)</li><li>▪ Pythagoras</li><li>▪ Inequalities on graphs</li><li>▪ Similar shapes (Lengths)</li><li>▪ Volume of a prism</li><li>▪ Finding the area of any triangle</li><li>▪ 3D Pythagoras and Trigonometry</li></ul> |
| Statistics   |
| <ul style="list-style-type: none"><li>▪ Scatter Graphs</li><li>▪ Cumulative Frequency</li><li>▪ Box Plots</li></ul>  |
| Ratio & Proportion   |
| <ul style="list-style-type: none"><li>▪ Compound Interest and Depreciation</li><li>▪ Percentage Change</li><li>▪ Reverse percentages</li><li>▪ Iteration</li><li>▪ Capture Recapture</li></ul>   |

**Paper 3 – Thursday 22<sup>nd</sup> June**

|  |
|--|
| Number   |
| <ul style="list-style-type: none"><li>▪ Standard Form</li><li>▪ Simplifying Algebra</li><li>▪ Error Intervals</li><li>▪ The Product rule for counting</li></ul>  |
| Algebra  |
| <ul style="list-style-type: none"><li>▪ Changing the subject of a Formula</li><li>▪ Inequalities</li><li>▪ Indices</li><li>▪ Expanding triple brackets</li><li>▪ Completing the square</li><li>▪ Algebraic Fractions</li><li>▪ Transforming Graphs <math>y = f(x)</math></li></ul>   |
| Geometry & Measures  |
| <ul style="list-style-type: none"><li>▪ Cylinders</li><li>▪ Similar shapes (Area and Volume)</li><li>▪ Volume conversion</li><li>▪ Circle theorems</li><li>▪ Transformations</li><li>▪ Congruent triangles</li><li>▪ Vectors Proof Questions</li><li>▪ Angles in polygons</li><li>▪ Finding the area of any triangle</li><li>▪ The Cosine Rule</li></ul> |
| Statistics   |
| <ul style="list-style-type: none"><li>▪ Two Way tables</li><li>▪ Combined Mean</li><li>▪ Cumulative Frequency</li></ul>  |
| Probability  |
| <ul style="list-style-type: none"><li>▪ Probability Trees</li><li>▪ Expected frequency</li></ul>   |
| Ratio & Proportion   |
| <ul style="list-style-type: none"><li>▪ Sharing ratio</li><li>▪ Speed and Density</li></ul>  |