

## **Year 11 January Higher Calculator paper.**

**Number:** Inequalities on a number line; Converting a ratio to fraction of amount; Problem solving using percentages of amounts; Problem solving with prime numbers; Simplifying expression using rules of indices; Problem solving involving ratios of original and new amounts; Reverse compound interest problem including finding interest earned; Solving upper and lower bounds problem using significant figures;

**Algebra:** Rate of change from a graph; Factorising expression; Next term of a quadratic sequence; Interpreting a quadratic graph: Finding maximum point, y-intercept and roots; Form and solve equation using properties of a square; Finding radius from circle equation; Expand and simplify double brackets; Algebraic proof; Finding value of variables (letters) from algebraic identity; Using functions and functions of functions,  $f(x)$  and  $g(x)$ ;

**Data Handling:** Basic probability; Theoretical probability and calculating relative frequency; Finding missing value given the mean of set of values; Interpreting given values to draw a box plot including finding upper quartile; comparing data using box plot;

**Shape, space and measures:** Find the sum of interior angles of an irregular polygon; Problem solving involving finding the area of a trapezium (compound shape); Finding missing side of triangle using sine rule; Using circle theorems to interpret from diagram; Finding angle between edge and base using Pythagoras and trigonometry in 3-d shape problem