Maths Entrance Paper for LVI

The paper consists of 2 sections; Section A and Section B which are both sat in 75 minutes.

Section A is 60 marks and is roughly the harder 60% of a GCSE/iGCSE paper. It is designed not to give advantage to any particular syllabus that has been studied. The questions will mostly be drawn from the list below but will include some problem solving. A reasonable mark on Section A is needed for entrance to Tonbridge. To study Maths and Further Maths (Double Maths) a good mark is needed in Section A.

- Quadratics: Factorising and Formula
- Linear Inequalities and Linear Simultaneous Equations
- Averages and Probability
- Area and Volumes including scale factors
- Sine, cosine rule and area of the triangle
- Straight Line Coordinate Geometry
- Circle Theorems
- Bounds in Calculations
- Algebraic Fractions
- Rational Numbers and Surds
- Recognising Graphs of $y = Ax^n$ $with$ $n = -2, -1, 0, 1, 2, 3$
- Simultaneous Equations with one linear and one quadratic

Section B is designed to help position those stronger candidates in the higher sets at Tonbridge. This applies to single maths but especially to those wanting to study double maths. There is a choice of 2 questions, both out of 20.

The first question tests some material a little beyond the GCSE/iGCSE and is what would normally be covered at the start of an Add Maths or Further Maths GCSE course. The question is split into parts and the parts will test some of the following material.

- Binomial (positive integer *n* only)
- Quadratic Inequalities
- Completing the Square
- Factor Theorem
- Harder Trigonometry
    1. Graphs of $sinx, cosx$ and $\tan x$

      2. Solution of Linear Trigonometric Equations
- Equation of a Circle
- Differentiation of Polynomials
    1. Equations of Tangents and Normals
    2. Finding and classifying maxima and minima

The second question takes the form of a longer problem and is designed to pick out those with real flair who may or may not have gone beyond the GCSE/iGCSE syllabus. No maths beyond the Section A will be tested but the problem solving skills required will be greater than in Section A.