Godalming College

Welcome to Godalming College Maths Department

To ensure that you make a good start to the course, you will need to do some preparation. Below is a check list for you. Please work through this carefully as it will ensure that you are well prepared for the start of the course.

Checklist:

- **Complete** the Essential Skills work on **separate A4 paper, showing all working and mark it** using the answers which are on GO. You should then **bring it completed and marked to your first Maths lesson.** The Essential Skills topics are GCSE level and are crucial to A-level Maths. You will find help sheets on GO if you need them.

- Complete the extension questions (PTO) on separate paper and bring your solutions to the first lesson.

- Log on to the Godalming Online (GO) Maths page. You should familiarise yourself with the Year 1 Further Maths page.

- Read through the course guide (on GO).

- Look at the web links; Jack Brown Maths, Dr Frost Powerpoints and the online text books are especially useful as well as practice papers and mark schemes which you will use later in the course.

You will have an **Essential Skills Test in your second lesson** so please make sure you are well prepared for this. We hope you will enjoy your time with us and look forward to meeting you again soon… with your completed work!

Extension Questions

Please do these questions on a separate piece of A4 paper so they can be handed in. Bring them to your first lesson. You must show all your working. Try to present your solutions logically

1 a Find the value of x such that
$$2^{x-1} = 16.$$
(3)

   b Find the value of y such that
$$2(3^y - 10) = 34.$$
(2)

2 a Express $x^2 - 6x + 11$ in the form $(x + a)^2 + b$.
(2)

   b Sketch the curve $y = x^2 - 6x + 11$, and show the coordinates of the turning point of the curve.
(3)

3 a Express $(12\frac{1}{4})^{-\frac{1}{2}}$ as an exact fraction in its simplest form.
(2)

   b Solve the equation
$$3x^{-3} = 7\frac{1}{9}.$$
(3)

4 Solve the equation
$$x\sqrt{12} + 9 = x\sqrt{3},$$
giving your answer in the form $k\sqrt{3}$, where k is an integer.
(4)

5 a Solve the equation
$$x^2 + 10x + 13 = 0,$$
giving your answers in the form $a + b\sqrt{3}$, where a and b are integers.
(4)

   b Hence find the set of values of x for which
$$x^2 + 10x + 13 > 0.$$
(2)

6 Solve the equations
   a $7(6x - 7) = 9x^2$
(3)

   b $\dfrac{2}{y+1} + 1 = 2y$
(4)

7 Solve the simultaneous equations
$$x - y + 3 = 0$$
$$3x^2 - 2xy + y^2 - 17 = 0$$
(6)

8 a Find the value of x such that
$$x^{\frac{3}{2}} = 64.$$
(2)

Total: 40 marks