ADVANCED LEVEL MATHS COURSEWORK TITLES

Choose one title from the following options and write to 2000 words

Note: If the student is presenting some of their original mathematical research (for which they would need to submit an affidavit) then the number of words can be reduced but it will probably still cover the same number of pages.

Note: The student should have a good understanding of Algebra II before starting.

Title: How to popularize and communicate this subject

The student should reflect on their experience of this subject so far. Has their interest and enthusiasm been stirred. If so, how? Could different methods be used at various stages in the course to improve understanding and skill levels? Could other areas of Maths be studies? If so, what and when and how? At what age did the student find Maths particularly interesting? Does scripture have Maths content?

Title: Historical essay showing the development of a particular branch of mathematics and its impact.

Some branches of Maths are old, for example, geometry. Some are 300-400 years old like calculus. Others like topology or string theory are much newer. Some Maths, like "Number Theory" seems quite impractical – is this actually the case?

Title: Historical essay on the life of a notable mathematician showing the state of the subject before the impact of his work and something of the follow up today (including mathematical content).

Some dealing with the whole attitude to life of the person chosen would be important.

Title: Show an elegant solution of an advanced problem

This must be the student's own work. A possible topic might be "the Fibonacci series and the Golden Mean" or "How to solve a cubic or quartic equation".

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Title: Present a collection of proofs in algebra and geometry at a suitable level

For example, proof of 9 point circle/Fibonacci series and the golden mean and architecture and Creation…

Title: Research into a branch of Mathematics not found in the curriculum.

Title: Triangle out of matches – an investigation.

You have a heap of matches and decide to make triangles out of them. No match can be broken so each side will have an integral number of matches. Tabulate your results. Establish any patterns you can see. If there were (a) 100 or (b) 1000 matches how many triangles could you make?