

# Maths A Level Summer Homework Optional Exercises

These activities are optional but recommended. To begin the A Level course, a thorough knowledge of GCSE Maths is needed, you can use these resources to ensure that your skills and knowledge are as good as can be before starting the course in September. There is a huge amount here, so we don't expect you to do every question! You should identify some topics that you need to brush up on and select some questions to do on those worksheets.

Alternatively, or in addition to that, the Transition to A Level Mathematics course below is highly recommended – and it's free!

- [1a 1 Expanding brackets and simplifying expressions](#)
- [1a 2 Surds](#)
- [1a 3 Rules of Indices](#)
- [1b 1 Factorising expressions](#)
- [1b 2 Completing the square](#)
- [1b 3 Solving quadratic equations](#)
- [1b 4 Sketching quadratic graphs](#)
- [1c 1 Solving linear simultaneous equations](#)
- [1c 2 Solving linear and quadratic simultaneous equations](#)
- [1c 3 Solving simultaneous equations graphically](#)
- [1d 1 Linear inequalities](#)
- [1e Sketching cubic and reciprocal graphs](#)
- [1f Translating graphs](#)
- [2a 1 Straight line graphs](#)
- [2a 2 Parallel and perpendicular lines](#)
- [2a 3 Pythagoras theorem](#)
- [2a 4 Proportion done](#)
- [2b Circle theorems](#)
- [4a Trigonometry](#)
- [6a Rearranging equations](#)
- [6b Volume and surface area of 3D shapes](#)
- [7b Area under a graph](#)

## Transition to A Level Mathematics (also not compulsory)

There is a free course called “Transition to A Level Mathematics” that you can access here: <https://amsp.org.uk/transition-to-a-level-mathematics-course/>

We highly recommend that you use this course over the summer holiday.

You will need to register for a free account on the Integral Maths website to access the course. Maths A Level students at Shrewsbury College use the Integral Maths website - in September, you will be given login details to access all the resources.