



PHSG

A level and Core Maths Year 12 ready program



Name _____

- 6-week lesson program
- Video lesson links
- Tasks and solution links
- 3 Summer A level starter tasks

The topics in this booklet have been selected to ensure that there is consolidatory coverage of the highest-grade GCSE topics, that there is an appropriate amount of content which features in the start of the A level Mathematics course and that will keep your Mathematical minds well trained!





































Once you have completed your tasks at the end of the Summer, please take a few minutes to submit the task completion feedback survey. This will let your teachers know which areas they need to focus on in September. Please use the link or QR code to access and submit the form no later than 31st August 2021.

[Click to access survey](#)





Each week you should cover two essential topics. Watch the linked videos and make notes. Then complete the linked (and printed) question sheets. Use the link to the full solutions to self-mark and correct your own work each week. (Resources can also be found by searching for these topics on the MathsGenie website).

Week	Date	Topic	Video link	Question sheet link	Solutions link
1	7th - 13th June 2021	Rearranging Complex Equations			
		Algebraic Fractions			
2	14th - 20th June 2021	Quadratic Simultaneous Equations			
		Quadratic Inequalities			
3	21st - 27th June 2021	Factorising Harder Quadratics			
		Circle Theorem Proofs			
4	28th June - 4th July	3D Pythagoras & Trigonometry			
		Sine Rule			
5	5th - 11th July	Cosine Rule			
		Perpendicular Lines & Equations of Tangents			
6	12th - 17th July	Equation of a Circle			
		Transformation of Graphs			

QR codes: A smart phone camera will scan these. Cover up adjacent codes when scanning!



If you accessing this document electronically, links for each of the topics are below:

	Topic	Link Video	Link Task	Link Solutions
1	Rearranging complex equations	Maths Genie - Revision - Changing the Subject of a Formula	7-rearranging-harder-formula-ws.pdf (mathsgenie.co.uk)	7-rearranging-harder-formulaans.pdf (mathsgenie.co.uk)
2	Simplifying and solving algebraic fractions	Maths Genie - Free Online GCSE and A Level Maths Revision	7-algebraic-fractions-ws.pdf (mathsgenie.co.uk)	7-algebraic-fractionsans.pdf (mathsgenie.co.uk)
3	Quadratic simultaneous equations	Maths Genie - Revision - Solving Simultaneous Equations	9-quadratic-simultaneous-equations-ws.pdf (mathsgenie.co.uk)	9-quadratic-simultaneous-equationsans.pdf (mathsgenie.co.uk)
4	Quadratic inequalities	Maths Genie - Revision - Solving Quadratic Inequalities	quadraticinequalities-ws.pdf (mathsgenie.co.uk)	quadraticinequalitiesans.pdf (mathsgenie.co.uk)
5	Factorising harder quadratics	Maths Genie - Revision - Factorising Quadratics with a Coefficient of x^2 greater than 1	7-factorising-harder-quadratics-ws.pdf (mathsgenie.co.uk)	7-factorising-harder-quadraticsans.pdf (mathsgenie.co.uk)
6	Circle theorem proofs	Maths Genie - Revision - Proof of the Circle Theorems	9-proof-of-circle-theorems-ws.pdf (mathsgenie.co.uk)	9-proof-of-circle-theoremsans.pdf (mathsgenie.co.uk)
7	3D Pythagoras and trigonometry	Maths Genie - Revision - 3D Pythagoras	7-3d-pythagoras-and-trigonometry-ws.pdf (mathsgenie.co.uk)	7-3d-pythagoras-and-trigonometryans.pdf (mathsgenie.co.uk)
8	Sine rule	Maths Genie - Revision - The Sine Rule	C:\Users\jimto\AppData\Local\Temp\msos320C.tmp (mathsgenie.co.uk)	7-sine-ruleans.pdf (mathsgenie.co.uk)
9	Cosine rule	Maths Genie - Revision - The Cosine Rule	C:\Users\jimto\AppData\Local\Temp\msos3A5C.tmp (mathsgenie.co.uk)	7-cosine-ruleans.pdf (mathsgenie.co.uk)
10	Perpendicular lines and equations of tangents	Maths Genie - Revision - Finding the equation of a tangent to a circle	C:\Users\jimto\AppData\Local\Temp\msos5AB4.tmp (mathsgenie.co.uk)	perpendicularlinesans.pdf (mathsgenie.co.uk)
11	Equation of a circle	Maths Genie - A Level Revision - Coordinate Geometry - The Equation of a Circle	as-pure-equation-of-a-circle.pdf (mathsgenie.co.uk)	https://www.mathsgenie.co.uk/resources/as-pure-equation-of-a-circleans.pdf
12	Transformation of graphs	Maths Genie - Revision - Transforming Graphs	9-transforming-graphs.pdf (mathsgenie.co.uk)https://www.mathsgenie.co.uk/resources/9-transforming-graphs.pdf	https://www.mathsgenie.co.uk/resources/9-transforming-graphsans.pdf



There are 3 SUMMER TASKS for you to complete through the school summer holidays.

The style and challenge that you will find in these questions, reflect those of A level Mathematics standards.

See how much of each task you can complete, use the mark schemes including in each document to self-assess and/or help you with the problems.

There is no expectation that you need to be able to score full marks on every question.

You can feedback to your new teachers on how you did by completing the online feedback survey once all three tasks have been completed to the best of your abilities.

Task	QR link	URL link
Summer Task 1 <i>Quadratics</i>		1 (physicsandmathstutor.com)
Summer Task 2 <i>Surds & Indices</i>		1 (physicsandmathstutor.com)
Summer Task 3 <i>Simultaneous Equations</i>		1 (physicsandmathstutor.com)