

## Preparing for A-level Maths

As you transition from Year 11 to Year 12, it is very important to refresh your memory on certain mathematical skills. Moreover, it is vital that you have a sound understanding of some more difficult skills. In the table below, you will find the skills that you should be confident with as you start Year 12. If you struggle on any of the topics, don't forget to use the video tutorials and try some of the earlier "workout" questions in the exercise to help develop your understanding.

Please bring your transition work to your lesson on the first day back in September. In your first maths lesson you will have a "baseline test" – the transition work will help you prepare for the test. If you encounter any difficulties, please do not hesitate to contact me at [lhay@sawtryva.org](mailto:lhay@sawtryva.org)

Miss Hay

	Topics to Prepare for A-level Maths	Video	Resource	Ans	Completed?
1	Surds	<a href="#">305 - Surds: intro, rules, simplifying</a>	<a href="#">"Apply" section Q1-8 (Do not use a calculator)</a>	<a href="#">Ans</a>	
		<a href="#">306 – Surds: adding/subtracting</a>			
		<a href="#">307 - Surds: rationalising denominators</a>			
		<a href="#">308 - Surds: expanding brackets</a>			
2	Rules of indices	<a href="#">173 - Indices: fractional</a>	<a href="#">"Apply" section Q1-4 (Do not use a calculator)</a>	<a href="#">Ans</a>	
		<a href="#">174 - Indices: laws of</a>	<a href="#">"Apply" section Q1-2 (Do not use a calculator)</a>	<a href="#">Ans</a>	
		<a href="#">175 - Indices: negative</a>	<a href="#">"Apply" section Q1-5 (Do not use a calculator)</a>	<a href="#">Ans</a>	
3	Factorising expressions	<a href="#">119a - Factorisation: splitting the middle</a>	<a href="#">"Workout" section Q4 &amp; "Applied" section Q1-4</a>	<a href="#">Ans</a>	
		<a href="#">120 - Factorisation: difference of 2 squares</a>	<a href="#">"Workout" section Q3 &amp; "Applied" section Q1</a>	<a href="#">Ans</a>	
		<a href="#">24 - Algebraic Fractions: Simplifying</a>	<a href="#">Q5</a>	<a href="#">Ans</a>	
4	Solving quadratic equations	<a href="#">266 - Quadratics: solving (factorising)</a>	<a href="#">"Apply" section Q1-6</a>	<a href="#">Ans</a>	
		<a href="#">267 - Quadratics: formula</a>	<a href="#">"Apply" section Q1-7</a>	<a href="#">Ans</a>	
5	Sketching quadratic graphs	<a href="#">265 - Quadratic graphs: sketching using key points</a>	<a href="#">"Workout" section Q10 &amp; "Apply" section Q1-3</a>	<a href="#">Ans</a>	
6	Completing the square	<a href="#">10 - Algebra: completing the square</a>	<a href="#">"Workout" section Q4 &amp; "Applied" section Q1-6</a>	<a href="#">Ans</a>	
		<a href="#">371 - Quadratic Graph: Completing the square</a>			
7	Manipulating algebraic expressions	<a href="#">15 - Algebra: expanding three brackets</a>	<a href="#">"Apply" section Q1-3</a>	<a href="#">Ans</a>	
		<a href="#">21 - Algebraic Fractions: addition</a>	<a href="#">Q5-6</a>	<a href="#">Ans</a>	
		<a href="#">22 - Algebraic Fractions: division</a>	<a href="#">Q2</a>	<a href="#">Ans</a>	
		<a href="#">23 - Algebraic Fractions: Multiplication</a>	<a href="#">Q3</a>	<a href="#">Ans</a>	

8	Solving simultaneous equations	<a href="#">295 - Simultaneous equations (elimination)</a>	<a href="#">“Apply” section Q1-8</a>	<a href="#">Ans</a>	
		<a href="#">296 - Simultaneous equations (advanced)</a>	<a href="#">“Workout” section Q3 &amp; “Apply” section Q.1-6</a>	<a href="#">Ans</a>	
9	Equation of a circle	<a href="#">12 - Algebra: equation of a circle</a>	<a href="#">Q1-11</a>	<a href="#">Ans</a>	
10	Linear inequalities	<a href="#">180 - Inequalities: graphical <math>y &gt; a</math> or <math>x &gt; a</math></a>	<a href="#">“Workout” section Q5 &amp; “Apply” section Q1-6</a>	<a href="#">Ans</a>	
		<a href="#">181 - Inequalities: graphical <math>y &gt; x + a</math></a>			
		<a href="#">182 - Inequalities: region</a>			
11	Quadratic inequalities	<a href="#">378 - Inequalities: quadratic</a>	<a href="#">“Workout” section Q6 &amp; “Apply” section Q1-7</a>	<a href="#">Ans</a>	
12	Translating graphs	<a href="#">323 - Transformations of graphs</a>	<a href="#">Q1-15</a>	<a href="#">Ans</a>	
13	Straight line graphs	<a href="#">194 - Linear graphs: find equation of a line</a>	<a href="#">“Apply” section Q1-6</a>	<a href="#">Ans</a>	
		<a href="#">195 - Linear graphs: equation through 2 points</a>			
14	Parallel and perpendicular lines	<a href="#">196 - Linear graphs: parallel lines</a>	<a href="#">“Apply” section Q1-10</a>	<a href="#">Ans</a>	
		<a href="#">197 - Linear graphs: perpendicular lines</a>			
		<a href="#">372 - Equation of a Tangent to a Circle</a>	<a href="#">Q1-9</a>	<a href="#">Ans</a>	
15	Pythagoras’ Theorem	<a href="#">263 - Pythagoras: distance points</a>	<a href="#">“Apply” section Q1-3</a>	<a href="#">Ans</a>	
16	Trigonometry	<a href="#">338 - Trigonometry: Sine graph</a>	<a href="#">“Apply” section Q1-13</a>	<a href="#">Ans</a>	
		<a href="#">339 - Trigonometry: Cosine graph</a>			
		<a href="#">340 - Trigonometry: Tangent graph</a>			
		<a href="#">333 - Trigonometry: sine rule (sides)</a>	<a href="#">“Apply” section Q1-10</a>	<a href="#">Ans</a>	
		<a href="#">334 - Trigonometry: sine rule (angles)</a>			
		<a href="#">334a - Trigonometry: sine rule (ambiguous case)</a>			
		<a href="#">335 - Trigonometry: cosine rule (sides)</a>	<a href="#">“Apply” Section Q1-12</a>	<a href="#">Ans</a>	
		<a href="#">336 - Trigonometry: cosine rule (angles)</a>			