

## PREPARING FOR A-LEVEL

## MATHEMATICS

Please look at the list of topics below. Start with the topics in which you are least confidentand work through the tutorials.

	Video	Exam Questions		Question poklet	Booklet Answers
1a-1 Expanding brackets &	Expanding	and <u>Ex</u>	<u>am</u>	<u>Expand a</u>	<u>nd Soluti</u>
simplifying	<u>Factorising</u>	Q	<u>uestions</u>	<u>Factorise</u>	<u>ons</u>
1a-1 Expanding brackets (triple	<u>Expanding</u>	<u>Triple</u> <u>Exa</u>	<u>m</u>	Expanding 1	Friple <u>Soluti</u>
brackets)	<u>Brackets</u>	Que	estions	<u>Brackets</u>	<u>ons</u>
1a-2 Surds	<u>Surds</u>	<u>Exam C</u>	Questions	<u>s</u> <u>Surds</u>	Solutions
1a-3 Rules of indices	<u>Indices</u>	<u>Exam Q</u>	uestions	Indices	<u>Solutions</u>
1a-3 Rules of indices (fractional	Fractional c	<u>ind Ex</u>	<u>am</u>	Fractional ar	<u>nd</u> <u>Solut</u>
and negative)	<u>Negative In</u>	idices Qu	uestions	Negative Inc	<u>lices ions</u>
1b-1 Factorising expressions	Expanding	and <u>Ex</u>	am_	Expand a	<u>nd Soluti</u>
	<u>Factorising</u>	Q	<u>uestions</u>	<u>Factorise</u>	<u>ons</u>
1b-1 Factorising expressions	<u>Algebraic</u>	<u>Exam</u>	_	<u>Algebraic</u>	<u>Solutio</u>
(algebraic fractions)	<u>Fractions</u>	<u>Quest</u>	<u>ions</u>	<u>Fractions</u>	<u>ns</u>
1b-2 Completing the square	Completing	<u>the Exan</u>	<u>1</u>	<u>Completing</u>	<u>the</u> <u>Soluti</u>
	<u>Square</u>	Que	<u>stions</u>	<u>Square</u>	<u>ons</u>
1b-3 Solving quadratics	Solving Qu	<u>adratics</u>	<u>Solvin</u>	<u>g Quadratics</u>	<u>Solutions</u>
1b-3 Solving quadratics (formula)	<u>Quadratic</u>	<u>Exam</u>		<u>Quadratic</u>	<u>Solutio</u>
	<u>Formula</u>	<u>Questi</u>	ions	<u>Formula</u>	<u>ns</u>
1b-3 Solving quadratics (harder	Factorising	<u>Harder</u> <u>Exc</u>	<u>am</u>	<u>Factorising F</u>	<u>Harder Solut</u>
factorising)	Quadratics	<u>QL</u>	iestions	<u>Quadratics</u>	<u>ions</u>
1b-4 Sketching quadratic graphs	Drawing Q	<u>uadratic Graph</u>	<u>s</u>	Quadratic Gr	<u>raphs</u> <u>Solutions</u>
1c-1 Solving linear simultaneous	<u>Simultaneo</u>	i <u>us Exar</u>	<u>n</u>	<u>Simultaneo</u> u	<u>us Soluti</u>
equations	<u>Equations</u>	<u>Que</u>	<u>stions</u>	<u>Equations</u>	<u>ons</u>
1c-2 Solving non-linear	<u>Quadratic</u>	<u>Ex</u>	<u>am</u>	<u>Quadratic</u>	<u>Solu</u>
simultaneous equations	<u>Simultaneo</u>	i <u>us</u> Q	<u>uestion</u>	<u>Simultaneou</u>	<u>is tion</u>
	<u>Equations</u>	<u>S</u>		<u>Equations</u>	<u>S</u>
1c-3 Solving simultaneous	Solving Sim			olving Simultar	
equations graphically	Equations (	<u>Graphically</u>	Ec	<u>luations Grap</u>	<u>hically utio</u>

				<u>ns</u>
1d-1 Linear Inequalities	Inequalities on Graph	<u>ns Ineq</u>	jualities on Graphs	<u>Solutions</u>
1d-2 Quadratic Inequalities	<u>Quadratic</u>	<u>Exam</u>	<u>Quadratic</u>	<u>Solutio</u>
	<u>Inequalities</u>	<u>Questions</u>	<u>Inequalities</u>	<u>ns</u>
1e Sketching cubic and reciprocal	Drawing Other Grap	<u>ns:</u>	<u>Cubic/Reciprocal</u>	<u>Soluti</u>
graphs	<u>Cubic/Reciprocal</u>		<u>Graphs</u>	<u>ons</u>
1f Translating graphs	Transforming Graphs	<u>s</u> <u>Tra</u>	insforming Graphs	<u>Solutio</u>
	<u>y=f(x)</u>	<u>y=f</u>	(X)	<u>ns</u>

	Video	Exam Questions	Exam Question Booklet	Booklet Answers
1a-1 Expanding brackets	Expanding and Fo	actorising Exam Qu	<u>estions</u> <u>Expand an</u>	<u>d Factorise</u> <u>Solutions</u>
<u>&amp;</u>				
simplifying				
1a-1 Expanding brackets	Expanding Triple I	<u>Brackets</u> <u>Exam Ques</u>	tions Expanding Trip	<u>ole Brackets</u> <u>Solutions</u>
(triple brackets)				
1a-2 Surds	<u>Surds</u>	Exam Questions	<u>Surds</u>	<u>Solutions</u>
1a-3 Rules of indices	Indices	Exam Questions	<u>Indices</u>	<u>Solutions</u>
1a-3 Rules of indices	Fractional and Ne	<u>gative Exam</u>	<b>Fractional and</b>	Negative Solutions
(fractional and negative)	Indices	Questions	<u>Indices</u>	
1b-1 Factorising expressions	Expanding and Fo	actorising Exam Qu	estions Expand an	<u>d Factorise</u> <u>Solutions</u>
1b-1 Factorising expressions	Algebraic Fraction	ns Exam Questio	ns <u>Algebraic Fra</u>	<u>ctions</u> <u>Solutions</u>
(algebraic fractions)				
1b-2 Completing the square	<u>Completing the So</u>	quare <u>Exam Questi</u>	ons <u>Completing th</u>	e Square <u>Solutions</u>
1b-3 Solving quadratics	Solving Quadratic	<u>s Solvin</u>	g Quadratics	<u>Solutions</u>
1b-3 Solving quadratics	Quadratic Formul	a Exam Question	ns Quadratic Fo	rmula <u>Solutions</u>
(formula)				
1b-3 Solving quadratics	Factorising Harde	er <u>Exam</u>	Factorising Ha	rder <u>Solutions</u>
(harder factorising)	Quadratics	Questions	<u>Quadratics</u>	
1b-4 Sketching quadratic	Drawing Quadrat	tic Graphs	Quadratic Graphs	<u>s</u> <u>Solutions</u>
graphs				
1c-1 Solving linear	Simultaneous Equ	ations Exam Questic	ons <u>Simultaneous E</u>	Equations Solutions
simultaneous equations				
1c-2 Solving non-linear	Quadratic Simulta	<u>neous Exam</u>	Quadratic Simu	<u>Iltaneous Solutio</u>
simultaneous equations	Equations	Questions	<u>Equations</u>	<u>ns</u>
1c-3 Solving simultaneous	Solving Simultane	ous Equations Sc	lying Simultaneous	Equations Solutio
equations graphically	Graphically	Gr	aphically	ns
1d-1 Linear Inequalities	Inequalities on Gr	<u>aphs</u> <u>lnequ</u>	alities on Graphs	<u>Solutions</u>
1d-2 Quadratic	Quadratic Inequa	ilities ExamQuesti	ons QuadraticIne	qualities <u>Solutions</u>
Inequalities			~	· · · · · · · · · · · · · · · · · · ·
1e Sketching cubic and	Drawing Other G	raphs: Cubic/Recipro	ocal <u>Cubic/Recipro</u>	cal Graphs Solutions
reciprocal graphs				
1f Translating graphs	Transforming Gra	i <u>phs y=f(x)</u> <u>Trar</u>	sforming Graphs y	<u>/=f(x) Solutions</u>
2a-1 Straight line	Equation of a Line	<u>Exam Question</u>	ns Equation of c	Line Solutions
graphs				
2a-2 Parallel and	Parallel and Perp			erpendicular <u>Solutio</u>
perpendicular graphs	<u>Lines</u>	Questions		ns
2a-2 Parallel and	Perpendicular line	es & eq. of a tangent	<u>Exam</u> <u>Pei</u> Questions Lin	r <u>pendicular Solutio</u> es ns

perpendicular graphs (hards)	
2a-3 Pythagoras'	Pythagoras Exam Questions Pythagoras Solutions
theorem	
2a-3 Pythagoras'	<u>3d Pythagoras</u> <u>3d Pythagoras</u> <u>Solutions</u>
theorem	
(3D)	
2a-4 Proportionality	Direct and Inverse Exam Direct and Inverse Solution
	Proportion Questions Proportion s
2b Circle theorems	<u>Circle Theorems</u> <u>Solutions</u>
4a Trigonometry	SOHCAHTOA (Trigonometry) Exam Questions SOHCAHTOA Solutions
(triangles)	
4a Trigonometry	The Sine RuleExam QuestionsThe Sine RuleSolutions
(triangles)	
– sine rule	
4a Trigonometry	The Cosine Rule Exam Questions The Cosine Rule Solutions
(triangles)	
– cosine rule	
6a Rearranging	Rearranging Harder Exam Rearranging Harder Solution
equations	
	<u>Formulae</u> <u>Questions</u> <u>Formulae</u> <u>s</u>
6b Vol & surface area of	Volume of a Prism Exam Questions Volume of Prisms Solutions
3-D	
shapes	
6b Surface Area	Surface AreaExam QuestionsSurface AreaSolutions
1c-1 Solving linear	Simultaneous Equations Exam Questions Simultaneous Equations Solutions
simultaneous equations	
1c-2 Solving non-linear	Quadratic Simultaneous Exam Quadratic Simultaneous Solutio
simultaneous equations	Equations Questions Equations ns
1c-3 Solving	Solving Simultaneous Equations Solving Simultaneous Equations Solutio
simultaneous	
equations graphically	Graphically <u>Graphically</u> <u>ns</u>
1d-1 Linear Inequalities	Inequalities on Graphs Inequalities on Graphs Solutions
1d-2 Quadratic	Quadratic Inequalities Exam Questions Quadratic Inequalities Solutions
Inequalities	
1e Sketching cubic and	Drawing Other Graphs: Cubic/Reciprocal Cubic/Reciprocal Graphs Solutions
reciprocal graphs	
1f Translating graphs	Transforming Graphs y=f(x) Transforming Graphs y=f(x) Solutions
2a-1 Straight line	Equation of a Line Exam Questions Equation of a Line Solutions
graphs	
2a-2 Parallel and	Parallel and Perpendicular Exam Parallel and Perpendicular Solutio
perpendicular graphs	Lines Questions Lines ns
2a-2 Parallel and	Exam Perpendicular Solutio
	Perpendicular lines & eq. of a tangent Questions Lines ns
perpendicular graphs	
(harder)	
(non-oci)	

2a-3 Pythagoras' theorem	Pythagoras Exam Questions Pythagoras Solutic	<u>ons</u>
2a-3 Pythagoras' theorem	3d Pythagoras 3d Pythagoras Solutions	
(3D)		
2a-4 Proportionality	Direct and Inverse Exam Direct and Inverse	<u>Solution</u>
	Proportion Questions Proportion	<u>s</u>
2b Circle theorems	<u>Circle Theorems</u> <u>Circle Theorems</u> <u>Solution</u>	<u>s</u>
4a Trigonometry (triangles)	SOHCAHTOA (Trigonometry) Exam Questions SOHCAHTOA Se	olutions
4a Trigonometry (triangles)	The Sine Rule Exam Questions The Sine Rule Solut	<u>ions</u>
– sine rule		
4a Trigonometry (triangles)	The Cosine Rule Exam Questions The Cosine Rule Solution	<u>utions</u>
– cosine rule		
6a Rearranging equations	Rearranging Harder Exam Rearranging Harder	<u>Solution</u>
	Formulae Questions Formulae	<u>s</u>
6b Vol & surface area of 3-D	Volume of a Prism Exam Questions Volume of Prisms Sol	<u>utions</u>
shapes		