List of Topics A Level Mathematics

Topic	Sub Topics	Topics	
1. Algebraic methods	1.1 Proof by contradiction	2. Functions and graphs	2.1 The modulus function
	1.2 Algebraic functions		2.2 Functions and mappings
	1.3 Partial fractions		2.3 Composite functions
	1.4 Repeated factors		2.4 Inverse functions
	1.5 Algebraic division		2.5 $y = \lvert f(x) \rvert$ and $y = f(\lvert x \rvert)$
			2.6 Combining transformations
			2.7 Solving modulus problems
3. Sequences and series	3.1 Arithmetic sequences	4. Binomial expansion	4.1 Expanding $(1 + x)^n$
	3.2 Arithmetic series		4.2 Expanding $(a + bx)^n$
	3.3 Geometric sequences		4.3 Using partial fractions
	3.4 Geometric series		4.4 Transforming functions
	3.5 Sum to infinity		
	3.6 Sigma notation		
	3.7 Recurrence relations		
	3.8 Modelling with series		
5. Radians	5.1 Radian measure	6. Trigonometric functions	6.1 Secant, cosecant and cotangent
	5.2 Arc length		6.2 Graphs of sec(x), cosec(x) and cot(x)
	5.3 Areas of sector and segments		6.3 Using sec(x), cosec(x), and cot(x)
	5.4 Solving trigonometric equations		6.4 Trigonometric identities
	5.5 Small angle approximations		6.5 Inverse trigonometric functions
7. Trigonometry and modelling	7.1 Addition formulae	8. Parametric equations	8.1 Parametric equations
	7.2 Using the angle addition formulae		8.2 Using trigonometric identities
	7.3 Double-angle formulae		8.3 Curve sketching
	7.4 Solving trigonometric equations		8.4 Points of intersection
	7.5 Simplifying $a\cos(x) \pm b\sin(x)$		8.5 Modelling with parametric equations
	7.6 Proving trigonometric identities		
	7.7 Modelling with trigonometric functions		
9. Differentiation	9.1 Differentiation sin(x) and cos(x)	10. Numerical methods	10.1 Locating roots
	9.2 Differentiating exponentials and logarithms		10.2 Iteration
	9.3 The chain rule		10.3 The Newton-Raphson method
	9.4 The product rule		10.4 Applications to modelling
	9.5 The quotient rule		
	9.6 Differentiating trigonometric functions		
	9.7 Parametric differentiation		
	9.8 Implicit differentiation		
	9.9 Using second derivatives		
	9.10 Rates of change		
11. Integration	11.1 Integrating standard functions	12. Vectors	12.1 3D coordinates

	11.2 Integrating f(ax + b)		12.2 Vectors in 3D
	11.3 Using trigonometric identities		12.3 Solving geometric problems
	11.4 Reverse chain rule		12.4 Application to mechanics
	11.5 Integration by substitution		
	11.6 Integration by parts		
	11.7 Partial fractions		
	11.8 Finding areas		
	11.9 The trapezium rule		
	11.10 Solving differential equations		
	11.11 Modelling with differential equations		
	11.12 Integration as the limit of a sum		

A Level Applied Mathematics Topic List

Topic	Subtopic	Topic	Subtopic
1. Regression, correlationand hypothesis testing	1.1 Exponential models	**2. Conditional probability**	2.1 Set notation
	1.2 Measuring correlation		2.2 Conditional probability
	1.3 Hypothesis testing for zero correlation		2.3 Conditional probabilities in Venndiagrams
			2.4 Probability formulae
			2.5 Tree diagrams
3. The normal distribution	3.1 The normal distribution	**4. Moments**	4.1 Moments
	3.2 Finding probabilities for normal distributions		4.2 Resultant moments
	3.3 The inverse normal distribution function		4.3 Equilibrium
	3.4 The standard normal distribution		4.4 Centre of mass
	3.5 Finding μ and σ		4.5 Tilting
	3.6 Approximating a binomial distribution		
	3.7 Hypothesis testing with the normal distribution		
5. Forces and friction	5.1 Resolving forces	**6. Projectiles**	6.1 Horizontal projection
	5.2 Inclined planes		6.2 Horizontal and vertical components
	5.3 Friction		6.3 Projection at any angle
			6.4 Projectile motion formulae
7. Applications of forces	7.1 Static particles	**8. Further kinematics**	8.1 Vectors in kinematics
	7.2 Modelling with statics		8.2 Vector methods with projectiles
	7.3 Friction and static particles		8.3 Variable acceleration in one dimension
	7.4 Static rigid bodies		8.4 Differentiating vectors
	7.5 Dynamics and inclined planes		8.5 Integrating vectors
	7.6 Connected particles		