Year 2/A PURE PLC **Name: _____**

1) ALGEBRAIC METHODS

I am able to…..

	☹	😐	☺
Use proof by contradication to prove true statements			
Multiply and divide two or more algebraic fractions			
Add or subtract two or more algebraic fractions			
Convert an expression with linear factors in the denominator into partial fractions			
Convert an expression with repeated linear factors in the denominator into partial fractions			
Divide algebraic fractions			
Convert an improper fraction into partial fraction form			

2) Functions

I am able to…..

	☹	😐	☺
Understand and use the modulus function			
Understand mappings and functions, and use domain and range			
Combine two or more functions to make a composite function			
know how to find the inverse of a function graphically and algebraically			
Sketch the graphs of the modulus functions y=If(x)I and y=f(IxI)			
Apply combination of two (or more) transformations to the same curve			
Transform the modulus function			

3) SEQUENCES AND SERIES

I am able to…..

	☹	😐	☺
Find the nth term of an arithmetic sequence			
Prove and use the formula for the sum of the first n terms of an arithmetic series			
Find the nth term of a geometric series			
Prove and use the formula for the sum to infinity of a convergent geometric series			
Use sigma notation to describe series			
Generate sequences from recurrence relations			
Model real-life situations with sequences and series			

4) BINOMIAL EXPANSION

I am able to…..

	☹	😐	☺
Expand (1+x)^n for any rational constant n			
Determine the range of values for x for which an expansion is valid			
Expand (a+bx)^n for any rational constant n			
Use partial fractions to expand fractional expressions			

5) RADIANS

I am able to…..

	☹	😐	☺
Convert between degrees and radians			
Apply radians to trig graphs and their transformations			
Know exact values of angles measured in radians			
Find areas of ectors and segments using radians			
Solve trig equations in radians			
Use approximate trig values when theta is small			

6) TRIGONOMETRIC FUNCTIONS

I am able to…..

	☹	😐	☺
Understand the definitions of secant, cosecant and cotangent and their relationship to cosine, sine and tangent.			
Understand the graphs of secant, cosecant and cotangent and their domain and range.			
Simplify expressions, prove simple identities and solve equations involving secant, cosecant and cotangent.			
Prove and use sec^2x and cosec^2x identitiy.			
Understand and use inverse trig functions and their domain and ranges.			

7) TRIGONOMETRY AND MODELLING

I am able to…..

	☹	😐	☺
Prove and use the Addition Formulae			
Understand and use the double angle formulae			
Solve Trigonometric Equations using the double angle and addition formulae			
Write expression of the form acosx +- bsinx in the forms Rcos(x+-a) or Rsin(x+-a)			
Prove trigonometric identities using a variety of identities			
Use trigonometric functions to model real life situations.			

8) PARAMETRIC EQUATIONS

I am able to…..

	☹	😐	☺
Convert Parametric Equations to Cartesian Equations using substitution			
Convert parametric Rquations to Cartesian Equations using trig identitites			
Understand and use parametric equations of curves and sketch parametric curves			
Solve coordinate geometry problems involving parametric equations			
Use parametric Equations in modelling in a variety of contexts.			
Use trigonometric functions to model real life situations.			

9) DIFFERENTIATION

I am able to…..

	☹	😐	☺
Differentiate trigonometric functions.			
Differentiate exponentials and logarithms.			
Differentiate functions using the chain, product and quotient rules.			
Differentiate parametric equations.			
Differentiate functions which are defined implicitly.			
Use the second derivative to describe the behaviour of a function.			
Solve problems involving connected rates of change and construct simple differential equations.			

10) NUMERICAL METHODS

I am able to…..

	☹	😐	☺
Locate roots of f(x)=0 by considering changes of sign			
Use iteration to find an approximation to the root of the equation f(x)=0			
Use the Newton-Raphson procedure to find approximations to the solutions of equations of the form f(x)=0			
Use numerical methods to solve problems in context			

11) INTEGRATION

I am able to…..

	☹	😐	☺
Integrate standard mathematical functions including trigonometric and exponential functions and use the reverse of the chain rule to integrate functions of the form f(ax+b)			
Use trigonometric identities in integration			
Use the reverse of the chain rule to integrate more complex functions			
Integrate functions by making a substitution, using integration by parts and using partial fractions			
Use integration to find the area under curve			
Use the trapezium rule to approximate the area under the curve			
Solve Simple differential equations and model real-life situations with differential equations			

11) VECTORS

I am able to…..

	☹	😐	☺
Understand 3D Cartesian coordinates			
Use Vectors in three dimensions			
Use vectors to solve geometric problems			
Model 3D motion in mechanics with vectors			