**A2 Level Core 3**

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|  | **What You Need To Know** | pe03020_[1] | pe03018_[1] | pe03019_[1] |
| 1. Algebra and Functions
 | * Definition of a function including the notation
* Domain and Range of a function
* Composition of functions such as

 * Inverse Functions and Their Graphs
* The Modulus Function
* Combinations of transformations of graphs
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| 1. Trigonometry
 | * Knowledge of functions.
* Understanding of the graphs of inverse trig functions and their domains
* Knowledge of secant, cosecant and cotangent. Their relationship to cos, sine and tan; and their domain and graphs.
* Knowledge and the use of . and .
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| 1. Exponentials and Logarithms
 | * The function of and it’s graph
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| 1. Differentiation
 | * Differentiation of , and linear combinations of these functions
* Differentiation using the product rule, quotient rule, the chain rule and by the use of
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| 1. Integration
 | * Integration of and , .
* Simple cases of integration by inspection or substitution and integration by parts.
* The methods as the reverse process of the product and chain rule.
* Evaluation of a volume of revolution
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| 1. Numerical Methods
 | * Location of roots of by considering the changes of sign of is continuous.
* Approximate solutions of equations using simple iterative methods, including recurrence relations of the form
* Numerical integration of function using the mid-ordinate rule and Simpson’s Rule.
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