Year 13 – Mock Examinations January 2023

Subject	Mathematics		
Title/Topic	**Format**	**Length**	**Date**
Paper 1 – Pure	Written Exam	2 hours	Friday 6 January 9.15am – 11.15am
Paper 2 – Pure	Written Exam	2 hours	Wednesday 11 January 12.40 – 2.40pm
Paper 3 – Mechanics & Statistics	Written Exam	2 hours	Friday 13 January 9.15am – 11.15am

My Advent assessment will test my knowledge on…

Pure Content

The below information outlines which pure content could be tested across paper 1 & paper 2.

Proof
Proof by contradiction

Algebra & Functions
Transformations with functions
Factor theorem
Functions with modelling
Understand & use graphs of functions
Interpret algebraic solutions of equations graphically
Sketch & solve modulus equations
Graphs of functions
Sketch & solve exponential graphs
Partial fractions
Use of discriminant

Co-ordinate Geometry
Equations of a circle
Equation of a tangent
Equation of a perpendicular
Distance between two points

Sequences & Series
Binomial expansion
Sequences
Geometric series
Sum to infinity

Trigonometry
Trigonometrical equations using compound angles
Trigonometrical modelling, proof and equations
Trigonometrical identities

Exponentials & Logarithms
Modelling with logarithms
Using & evaluating logarithms
Plot logarithmic graphs

Differentiation
Applications of maxima and minima
Differentiation from first principles
Parametric differentiation
Differentiating quotient rule
Differentiating a trigonometrical function

Integration
Indefinite integration
Parametric integration
Definite integration
Graphs and integration

Numerical Methods
Locating roots

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Statistics Content	Mechanics Content
Statistical Sampling Sampling methods **Data Presentation & Interpretation** Standard deviation & mean Using histograms Using scatter diagrams Outliers **Probability** Probability from a table Probability from Venn diagrams Dependent probability **Statistical Distributions** Binomial probabilities **Hypothesis Testing** Hypothesis test	**Kinematics** Derive SUVAT equations Constant acceleration Variable acceleration, velocity & distance Velocity time graphs Kinematics **Forces & Newtons Laws** Find resultant forces F = ma Use of pulleys Motion under gravity

What should I do to revise and prepare for this assessment?

To prepare for this assessment:

1. Attempt the practice paper provided to you
2. Review your classwork from this term
3. Complete and re-attempt the unit tests from integral.
4. Practice questions from your text book.
5. Review your class-based topic assessments completed so far this term.

What useful websites/resources could I use to help me prepare?

https://integralmaths.org/

https://www.khanacademy.org/math

https://www.whitegroupmaths.com/

http://www.mathcentre.ac.uk/