	NOTICE OF ASSESSMENT **YEAR: 9** **COURSE: Mathematics Stage 5.3 - Accelerated**		
TASK NAME:	Mid-course Examination		
TASK NO:	4	**Weighting**	15%
DATE DUE:	20/06/2022	**SUBMISSION TYPE:**	In class
DATE ISSUED:	06/06/2022		
TOPIC AREA:	Numbers of Any Magnitude Indices and Surds Algebraic Techniques Linear Relationships Solving Equations Trigonometry		

TASK DESCRIPTION:

This task will be a 1 hour test.

All questions worth more than one mark will have marks assigned to mathematical reasoning and justification. Working needs to be shown for these questions to receive full marks.

Your NESA approved calculator may be used for the entire test

You may bring in your summary folder, with 2 sheets per topic.

OUTCOMES ASSESSED:

MA5.1-9MG Interprets very small and very large units of measurement, uses scientific notation, and rounds to significant figures

MA5.1-10MG applies trigonometry, given diagrams, to solve problems, including problems involving angles of elevation and depression.

MA5.1-5NA Operates with algebraic expressions involving positive-integer and zero indices, and establishes the meaning of negative indices for numerical bases

MA5.1-6NA determines the midpoint, gradient and length of an interval, and graphs linear relationships

MA5.2-13MG applies trigonometry to solve problems, including problems involving bearings.

MA5.2-6NA simplifies algebraic fractions, and expands and factorises quadratic expressions

MA5.2-7NA Applies index laws to operate with algebraic expressions involving integer indices

MA5.2-8NA solves linear and simple quadratic equations, linear inequalities and linear simultaneous equations, using analytical and graphical techniques

MA5.2-9NA uses the gradient-intercept form to interpret and graph linear relationships

MA5.2- 13MG applies trigonometry to solve problems, including problems involving bearings

MA5.3-15MG applies Pythagoras' theorem, trigonometric relationships, the sine rule, the cosine rule and the area rule to solve problems

MA5.3-5NA selects and applies appropriate algebraic techniques to operate with algebraic expressions

MA5.3-6NA Performs operations with surds and indices

MA5.3-8NA uses formulas to find midpoint, gradient and distance on the Cartesian plane, and applies standard forms of the equation of a straight line

SUCCESS CRITERIA:

To be successful in this task, students will need to justify their responses by demonstrating the following problem solving strategies:

Numbers of Any Magnitude:

- Using appropriate units to express very small and very large quantities or time scales and intervals
- Expressing numbers in scientific notation
- Describing the limits of accuracy and calculate errors in measurement

Indices

- Extending and applying the index laws to variables, using positive-integer indices and the zero index.
- Simplifying algebraic products and quotients using index laws
- Applying index laws to numerical expressions with integer indices, both positive and negative

Surds

- Defining rational and irrational numbers and performing operations with surds and fractional indices, including rationalising the denominator

Algebraic Techniques

- Applying the four operations to simple algebraic fractions
- Applying the four operations to complex algebraic fractions
- Adding and subtracting algebraic fractions with binomial numerators
- Applying the distributive law to the expansion of algebraic expressions
- Factorising algebraic expressions
- Expanding binomial products
- Recognise and apply the special binomial products - Squared Difference, Squared Sum, Difference of Two Squares
- Factorising algebraic expressions
    - common factors
    - special binomial products
    - grouping in pairs for four-term expressions
    - quadratic trinomials

Linear Relationships:

- Determining the gradients and intercepts of lines.
- Determining the equations of lines given the gradient and a point or two points.
- Determining the equation of a line given its graph.
- Understanding the effects on the graph of changing the values in an equation of a straight line
- Determining the midpoint and length of intervals.

Solving Equations

- Solving linear equations, including those involving variables on both sides and/or with fractions
- Solving quadratic equations through algebra or factorising.
- Using formulas, including rearranging them.
- Solving linear inequalities.
- Solving linear simultaneous equations using a specified method:
    - Graphical Method
    - Substitution Method
    - Elimination Method

Trigonometry

- Using *sin*, *cos* and *tan* to find the length of sides and size of angles in right angled triangles.
- Using *sin* and *cos* rules to find the length of sides and size of angles in non-right angled triangles.
- Solving angles of elevation and depression problems
- Solving bearings problems
- Solving three-dimensional trigonometry problems

FEEDBACK TYPE:

The teacher will provide feedback outlining strengths and areas for improvement to build on knowledge, understanding and skills for future learning. This will be done through written annotations of the assessment script and verbal feedback at a whole class and individual level upon the return of the assessment.