



JOHN EDMONDSON HIGH SCHOOL

Assessment Notification

Faculty: Mathematics

Course: Mathematics

Year: 8

Assessment Task: 2

Assessment Weighting: 30%

Due: Term 2, Week 3

Date: Thursday 16/05/2024 for 8T, 8O, 8B, 8R, 8U, 8K

Task Type: Hand in Task In Class Task Practical Task

Outcomes assessed (NESA)
MA4-ALG-C-01, MA4-IND-C-01, MA4-FRC-C-01, MAO-WM-01 Please Note: Further information about these outcome codes can be found on the NESA Website
Task Description/Overview
This in class written examination will consist of short answer questions. No reference material is allowed during the examination. Time allowed: 45 Minutes (within 1 Period) Equipment Required: Black Pen(s) and a NESA approved calculator.
Detailed Assessment Task Description
Students may be asked questions relating to: Algebraic techniques: <ul style="list-style-type: none">• Substitute numbers into algebraic expressions and evaluate the result• Identify like terms, and add and subtract them to simplify algebraic expressions• Simplify algebraic expressions that involve multiplication and division• Simplify algebraic expressions involving mixed operations• Explain the role and meaning of grouping symbols in algebraic expressions• Apply the distributive law to expand and simplify algebraic expressions by removing grouping symbols• Identify and list factors of a single term• Factorise algebraic expressions using knowledge of factors and finding the highest common numerical factor (HCF)• Factorise algebraic expressions using knowledge of factors by finding a common algebraic factor, including expressions involving more than 2 terms Indices: <ul style="list-style-type: none">• Describe numbers written in index form using terms such as base, power, index and exponent• Represent numbers in index notation limited to positive powers• Represent in expanded form and evaluate numbers expressed in index notation, including powers of 10• Apply the order of operations to evaluate expressions involving indices• Determine and apply tests for divisibility for 2, 3, 4, 5, 6 and 10• Represent a whole number greater than one as a product of its prime factors, using index notation where appropriate• Use the notations for square root ($\sqrt{\quad}$) and cube root ($\sqrt[3]{\quad}$)

- Recognise and describe the relationship between squares and square roots, and cubes and cube roots for positive numbers
- Verify, through numerical examples, that $\sqrt{ab} = \sqrt{a} \times \sqrt{b}$
- Estimate the square root of any non-square whole number and the cube root of any non-cube whole number, then check using a calculator
- Identify and describe exact and approximate solutions in the context of square roots and cube roots
- Apply the order of operations to evaluate expressions involving square roots, cube roots, square numbers and cube numbers
- Establish the multiplication, division and the power of a power index laws, by expressing each number in expanded form with numerical bases and positive-integer indices
- Verify through numerical examples that $(ab)^2 = a^2b^2$
- Establish the meaning of the zero index
- Apply index laws to simplify and evaluate expressions with numerical bases

Percentages:

- Define rational numbers as numbers that can be written in the form a/b , where a and b are integers and $b \neq 0$
- Classify fractions and percentages as rational numbers
- Recognise and explain that numbers with terminating or recurring decimals are rational
- Represent fractions as decimals (terminating and recurring) and percentages
- Represent terminating decimals as fractions and percentages
- Represent percentages as fractions and decimals
- Compare and order fractions, mixed numbers, decimals (terminating and recurring) and percentages
- Represent one quantity as a fraction, decimal or percentage of another by considering appropriate units
- Calculate percentage increases and decreases in various contexts
- Examine the financial applications of percentage increase and decrease, including profit and/or loss as a percentage of cost price or selling price
- Apply knowledge of percentages to calculate quantities in various contexts
- Apply knowledge of percentage increases and decreases to solve problems in various contexts
- Solve real-life problems involving percentages using the unitary method or other techniques
- Solve financial problems involving percentages, specifically considering GST, profit and loss

Test/Examination Structure	
Section Description	Marks Available
Algebraic techniques	10
Indices:	10
Percentages	30
Total Marks for this task	50

Satisfactory completion of courses

A course has been satisfactorily completed when the student has:

- Followed the course developed/endorsed by the NSW Educational Standards Authority (NESA)
- Applied himself/herself with diligence and sustained effort to the set tasks and experiences provided in the course.
- Achieved some or all of the course outcomes.