TSSM
Creating VCE Success

Exam Practice Guide

Unit 1
Mathematical Methods
Examination 1

Key Features:
- ✓ 36 original examination style questions on all examinable topics.
- ✓ Full solutions and a marking guide to all questions.
- ✓ Separated into key topic areas within each Area of
  Study, enabling students to master one topic at a time.
- ✓ Written by VCE assessors who mark the real examinations.
- ✓ Excellent resource for examination practice.

Helping VCE students be the best they can be.

CONTENTS

AREA OF STUDY 1: Functions and Graphs & AREA OF STUDY 2: Algebra

Topic 1: Polynomials

Question 1

a.   Using polynomial long division, determine the quotient and remainder from of $\dfrac{x^3 - 7x^2 + 5x - 8}{x - 1}$.

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3 marks

b.   Verify that the remainder found in **part a** is correct by substituting $x = 1$ into the cubic.

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1 mark

Question 2

A mixed cricket squad must consist of 3 more girls than boys, and it must have between 11 and 15 members inclusive.

a.   Construct an equation using inequalities that contains the above information. Let *n* be the number of boys on the team.

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_____

2 marks

b.   Determine how many boys can be on the team.

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_____

2 marks

Question 3

A rainwater tank is being filled due to a long, steady downpour. The tank can hold 2500 litres, but before the rain started it already had 150 litres left in it. The tank is filling at 25 litres a minute. Assume that the rain will last indefinitely.

a.   Write down a rule for the volume of the tank $V(t)$.

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1 mark

b.   How many litres will be in the tank after an hour?

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1 mark

c.   How many minutes will pass before the tank becomes full?

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1 mark

d.   The tank springs a leak, and 15 litres a minute are now pouring out if it. Write down the new rule for $V(t)$.

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_____

1 mark