

# Exam Practice Guide

## Unit 2

## Mathematical Methods

## Examination 1

### Key Features:

- ✓ 48 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.

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***Helping VCE students be the best they can be.***

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SAMPLE

# CONTENTS

	<b>Page</b>
<b>Area of study 1: Functions and Graphs</b>	
Topic 1 - Circular functions	4
<b>Area of study 2: Algebra</b>	
Topic 1 - Exponential and Logarithmic functions	12
<b>Area of study 3: Rates of change and calculus</b>	
Topic 1 - Differential calculus	18
Topic 2 - Integration	25
<b>Area of study 4: Probability</b>	
	28
<b>SOLUTIONS</b>	<b>34</b>

**AREA OF STUDY 1: Functions and Graphs****Topic 1: Circular Functions****Question 1**

For the function  $f(x) = \frac{1}{2} \sin(6x)$

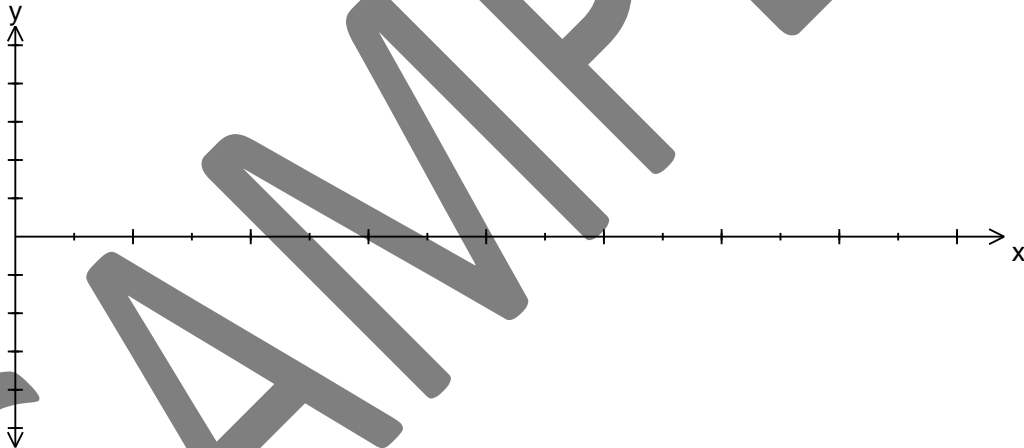
- a. State the period and amplitude.

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1 mark

- b. Sketch the graph of  $f(x) = \frac{1}{2} \sin(6x)$  for  $x \in [0, \pi]$ , label all axial intercepts.



2 marks

- c. State the range of  $y = f(x)$

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1 mark

**Question 2**

For the function  $f(x) = -3\cos\left(\frac{x}{2}\right)$

- a. State the period and amplitude.

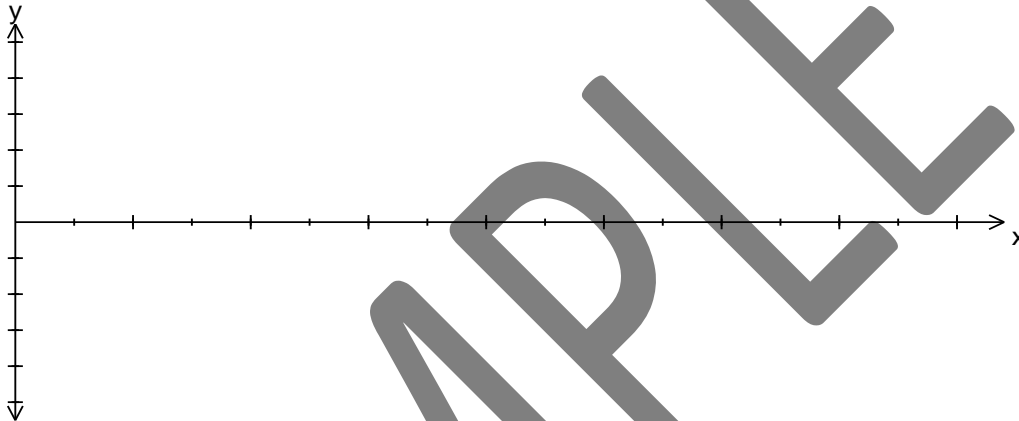
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1 mark

- b. Sketch the graph of  $f(x) = -3\cos\left(\frac{x}{2}\right)$  for  $x \in [0, 8\pi]$ , label all axial intercepts.



2 marks

- c. State the range of  $y = f(x)$

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1 mark

**Question 3**

For the function  $f(x) = 2\tan(2x)$  where  $x \in ]-\pi, \pi[$

- a. State the period.

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1 mark

- b. Find the equation(s) of the asymptote(s).

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2 marks