

# Exam Practice Guide

## Unit 2

## Mathematical Methods (CAS)

## Examination 2

### Key Features:

- ✓ 115 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

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

Steve ran 15 km due East, then 5 km due North. What is his true bearing from his starting point?

- A.  $60^{\circ}32'$
- B.  $19^{\circ}28'$
- C.  $71^{\circ}34'$
- D.  $18^{\circ}25'$
- E.  $31^{\circ}10'$

**Question 2**

When you convert 1.5894 radians into degrees, what is the value of the minutes?

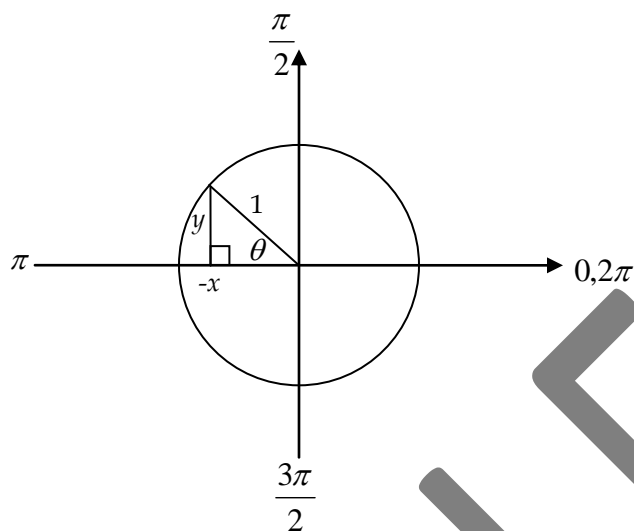
- A. 3
- B. 57
- C. 91
- D. 3.95
- E. 5

**Question 3**

The number of solutions to  $\frac{7}{2}\tan(2x) = -1$  for  $0 \leq x \leq 4\pi$  is

- A. 8
- B. 7
- C. 6
- D. 5
- E. 4

## Question 4



If  $\theta$  is an angle on the unit circle above, where  $\frac{\pi}{2} \leq \theta \leq \pi$ , and  $\sin \theta = y$ , then the value of  $\cos \theta$  is

- A.  $x$
- B.  $-\frac{y}{x}$
- C.  $\frac{y}{x}$
- D.  $-x$
- E.  $-y$

## Question 5

A graph of the form  $y = a \times \sin(bx) + k$  has an amplitude of 4, a period of  $\pi$ , and is centred along the line  $y = -2$ . The actual equation of the graph is

- A.  $y = -2\sin(2x) + 4$
- B.  $y = 4\sin(2x) - 2$
- C.  $y = 4\sin(2x) + 2$
- D.  $y = 4\sin(\pi x) - 2$
- E.  $y = -2\sin(2x) + 2$