

VCE Mathematical Methods

Examination 1

Question and Answer Book

- Reading time is 15 minutes
- Writing time is 1 hour

3 questions (11 marks)

Question 1 (3 marks)

Let $y = x^2 \cos(x)$. Find dy/dx .

A. Find the gradient at $x = 8$.

2 marks

Question 2 (2 marks)

Solve $e^x = 7$ for x .

Question 3 (6 marks)

Let f be defined on $[0, 2\pi]$. $f(x) = 2\cos(2x) - 1$.

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| A. | State the range of f . | 1 mark |
| B. | Solve $f(x) = 0$ for x . | 3 marks |
| | i. Show working. | 2 marks |
| | ii. Exact values. | 1 mark |
| C. | Sketch the graph. | 2 marks |