

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. (2 marks)

Find the gradient of the tangent to $y = f(x)$ at $x = 8$.

Question 2 (6 marks)

Let $f(x) = 2\cos(2x) - 1$.

a. (1 mark)

State the range of f .

b. (3 marks)

Solve $f(x) = 0$ for x .

i. (2 marks)

Show your working.

ii. (1 mark)

Give exact values.

c. (2 marks)

Sketch the graph of $y = f(x)$.

Question 3 (2 marks)

Solve $e^{(2x)} - 8e^x + 7 = 0$ for x .