



SURNAME: Richards

FORENAME(S): Jake

12 Pages

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

1	Student Number	2500967
2	Title of Examination Paper	Mathematics
3	Module Code	ACDB 4003
4	Date and Time of Examination	12 th May 2026 09:30
5	Examination Venue	1Q310
6	Seat Number	7
7	Number of Answer Books handed in	1

[illegible]

(Gweler yr ochr arall am y fersiwn Cymraeg)

1. i) $3x + 4y - z - 2x - 3y + 2z + x + 4z$
 $3x - 2x + x = 2x - z - 3y + 2z + 4z$
 $= 2x + 5z - 3y$

2

1. ii) $x(x+4) - (x-3)$
 $x^2 + 4x - x + 3$
 $= 2x$

$\Rightarrow x^2 + 4x - x + 3$
 $= x^2 + 3x + 3$

1

1. iii) $p^3qr \times 2pq^4 \times 4qr^2$
 $= 8p^4q^6r^3$

1

1. iv) $\frac{48p^2q^3r^1}{12pqr^{-3}} = 4pq^2r^{-4}$

$r^{1-(-3)} = r^4$

1

1. v) $f^3g/16h \times gh^3/4fh \times 32fh^5/f^4$
 $\frac{128f^3}{4f^5 16h^6} = \frac{32f^2g^2h^8}{4f^5 16h^6}$

1

2. i)

$$\begin{array}{r} x^2 + 7x = -12 \\ x^2 + 7x + 12 = 0 \\ (x+3)(x+4) = 0 \\ x+3=0 \quad x+4=0 \\ x=-3 \quad x=-4 \end{array}$$

$$\begin{aligned} x^2 + 7x &= -12 \\ -7x^2 + x &= -12 \\ -7x &= -12 \\ x &= 1.714 \end{aligned}$$

$$\Rightarrow x^2 + 7x + 12 = 0$$

$$(x+3)(x+4) = 0$$

$$\Rightarrow x = -3, x = -4$$

0

2. ii)

$$\frac{(x-3)}{2} = \frac{(2x+1)}{3}$$

$$x^2 - 1.5 = x^2 + 0.3$$

$$-1.5 = x^2 + 0.3$$

$$-1.2 = x^2$$

X b.s. by 6

0

3. i)

1.61

X Show Method here!

0

0

3. ii)

$$5. \text{ Determinant} = \begin{vmatrix} -1 & 2 \\ -3 & -4 \end{vmatrix} = -1(-4) - 2(-3)$$

$$\text{Inverse} = \frac{1}{-10} = 2 \times 2$$

$$\begin{vmatrix} -1 & -2 \\ -3 & -4 \end{vmatrix}$$

$$A^{-1} = \frac{1}{|A|} C^T \quad \textcircled{0}$$

this is a poor effort! More revision
and practise needed prior to sitting
examinations!