

Advanced Higher Maths
SQA 2024 Paper 2
Question 3



(a) Use Gaussian elimination to express z in terms of λ for the system of equations:

$$\begin{aligned}x - y - 3z &= 1 \\2x - 3y - 5z &= 8 \\x + 2y + \lambda z &= -7.\end{aligned}\quad 4$$

(b) State the value of λ for which this system is inconsistent. 1

(c) Determine the solution of this system when $\lambda = -1$. 1

Answers:

(a) $z = \frac{10}{\lambda + 6}$

(b) -6

(c) $x = 3, y = -4, z = 2$