Advanced Higher Maths
SQA 2025 Paper 1
Question 8

Three planes are defined by

$\pi_1: \quad x - y + 4z = -6$

$\pi_2: \quad 2x + 3y + z = 15$

$\pi_3: \quad 3x + 2y - 2z = 16$

(a) Use Gaussian elimination to find T, the point of intersection of the three planes. **4**

The line L_1 is defined by $\frac{x+4}{3} = \frac{y-7}{2} = \frac{z-4}{1}$.

(b) Find P, the point of intersection of the line L_1 and the plane π_3. **3**

The line L_2 passes through points T and P.

(c) Find, in parametric form, the equations of the line L_2. **2**

Answers:

(a) (2, 4, –1)

(b) (2, 11, 6)

(c) eg $x = 2,\ y = 11 + 7\lambda,\ z = 6 + 7\lambda$