Advanced Higher Maths
SQA 2016 Paper
Question 14

Two lines L_1 and L_2 are given by the equations:

$$L_1: \quad x = 4 + 3\lambda, \quad y = 2 + 4\lambda, \quad z = -7\lambda$$

$$L_2: \quad \frac{x-3}{-2} = \frac{y-8}{1} = \frac{z+1}{3}$$

(a) Show that the lines L_1 and L_2 intersect and find the point of intersection. **5**

(b) Calculate the obtuse angle between the lines L_1 and L_2. **4**

Answers:

(a) $(7, 6, -7)$

(b) $\cos^{-1}\left(\frac{-23}{\sqrt{74}\sqrt{14}}\right) \approx 135 \cdot 6°$