

Advanced Higher Maths  
SQA 2024 Paper 2  
Question 14



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A plane passes through A (2, -1, 8), B (1, 1, -1) and C (4, -2, 11).

- (a) (i) Determine  $\overline{AB}$  and  $\overline{AC}$ . 1  
(ii) Hence find the Cartesian equation of the plane. 3

A line is defined by the equations  $\frac{x-1}{1} = \frac{y+1}{-1} = \frac{z+1}{4}$ .

- (b) Show that the line and the plane do not intersect. 3
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Answers/method:

(a) (i)  $\begin{pmatrix} -1 \\ 2 \\ -9 \end{pmatrix}, \begin{pmatrix} 2 \\ -1 \\ 3 \end{pmatrix}$

(ii)  $x + 5y + z = 5$

- (b) Substitute parametric equations of the line into LHS of the plane equation:  $-5 \neq 5$ .