Question	Scheme	Marks	AOs
4(a)	$\begin{vmatrix} 1 & -3 & 2 \\ k & 1 & -1 \\ 6 & -5 & k-1 \end{vmatrix} = k-1-5+3\left(k\left(k-1\right)+6\right)+2\left(-5k-6\right)$	M1 A1	3.1a 1.1b
	$3k^2-12k=0 \Rightarrow k=...$	M1	3.1a
	$k = 0$ or 4	A1	1.1b
		(4)	
(b)(i)	$\begin{pmatrix} 1 & -3 & 2 \\ 5 & 1 & -1 \\ 6 & -5 & 4 \end{pmatrix}^{-1} = \frac{1}{15}\begin{pmatrix} -1 & 2 & 1 \\ -26 & -8 & 11 \\ -31 & -13 & 16 \end{pmatrix}$	M1 A1	1.1b 1.1b
	$\frac{1}{15}\begin{pmatrix} -1 & 2 & 1 \\ -26 & -8 & 11 \\ -31 & -13 & 16 \end{pmatrix}\begin{pmatrix} -7 \\ -5 \\ 1 \end{pmatrix} = ...$	M1	1.1b
	$\left(-\frac{2}{15}, \frac{233}{15}, \frac{298}{15}\right)$	A1	1.1b
(b)(ii)	Three planes that meet at a point.	A1	2.2a
		(5)	
			(9 marks)

Notes

(a)

M1: Starts by attempting to find the determinant in terms of k

A1: Correct determinant

M1: Realises that the condition for non-uniqueness is a zero determinant and solves to find k

A1: Correct values

(b)

M1: Uses $k = 5$ and attempts the inverse matrix

A1: Correct inverse

M1: Multiplies their inverse by $(-7, -5, 1)^T$

A1: Correct exact coordinates

A1: Deduces the correct interpretation