Question	Answer	Marks	Guidance
11(a)	$\frac{n!}{(n-4)!} = \frac{(2n)!}{6(2n-3)!}$	**B1**	
	$n(n-1)(n-2)(n-3) = \frac{2n(2n-1)(2n-2)}{6}$	**2**	**Dep** on previous **B1** **B1** for simplification of one side
	e.g. $3(n-2)(n-3) = 2(2n-1)$ $3n^2 - 19n + 20 = 0$ **AG**	**B1**	**Dep** on all previous **B** marks With sufficient detail shown
11(b)	$(3n-4)(n-5) = 0$ $n = 5$ only	**2**	**M1** for attempt to solve the given equation
12	$\overrightarrow{AB} = \begin{pmatrix}7\\4\end{pmatrix} - \begin{pmatrix}1\\7\end{pmatrix} \quad \left[= \begin{pmatrix}6\\-3\end{pmatrix}\right]$	**M1**	
	$\overrightarrow{AC} = k\begin{pmatrix}1\\2\end{pmatrix} - \begin{pmatrix}1\\7\end{pmatrix} \quad \left[= \begin{pmatrix}k-1\\2k-7\end{pmatrix}\right]$	**M1**	
	Use of $\overrightarrow{AB}$ // $\overrightarrow{AC}$ or $\overrightarrow{AC} = m\overrightarrow{AB}$ to obtain either $\frac{k-1}{6} = \frac{2k-7}{-3}$ or $k-1 = 6m$ and $2k-7 = -3m$ oe	**M1**	Form equation without vectors **FT** *their* $\overrightarrow{AB}$ and $\overrightarrow{AC}$
	$k = 3$	**A1**	
	$\overrightarrow{AC} = \begin{pmatrix}3-1\\2\times3-7\end{pmatrix} = \begin{pmatrix}2\\-1\end{pmatrix}$ or $m = \frac{1}{3}$	**M1**	Substitute *their k* into *their* $\overrightarrow{AC}$
	$AC : AB = 1 : 3$ or $\frac{1}{3}$	**A1**	

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