2	**(a)**		$\overrightarrow{OM} = \frac{1}{2}\left(\overrightarrow{OC} + \overrightarrow{OB}\right) = 3\mathbf{i} - 2\mathbf{j} + 2\mathbf{k}$	**M1**	**1.1**	Attempt to find $\overrightarrow{OM}$	
			$\left\|\overrightarrow{OM}\right\| = \sqrt{3^2 + (-2)^2 + 2^2} = \sqrt{9+4+4} = \sqrt{17}$	**E1**	**2.1**	AG	
				[2]			
2	**(b)**		$\overrightarrow{BC} = 8\mathbf{i} - 4\mathbf{j} - 8\mathbf{k}$	**M1**	**1.1**		
			$\overrightarrow{OD} = \overrightarrow{OA} + \overrightarrow{AD} = \overrightarrow{OA} + \overrightarrow{BC}$	**E1**	**2.4**	Express $\overrightarrow{OD}$ in terms of known vectors	
			$\overrightarrow{OD} = 3\mathbf{i} - 4\mathbf{j} + 2\mathbf{k} + 8\mathbf{i} - 4\mathbf{j} - 8\mathbf{k}$ $= 11\mathbf{i} - 8\mathbf{j} - 6\mathbf{k}$	**E1**	**2.1**	AG An intermediate step must be seen	
				[3]			