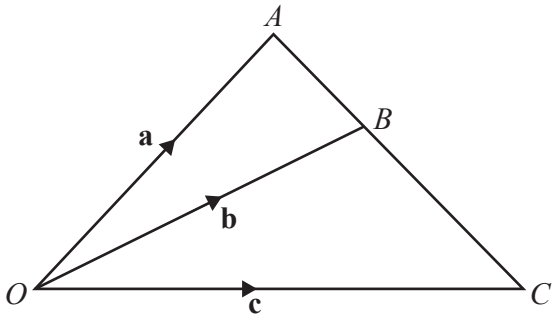
7 (a)



The diagram shows triangle OAC, where $\overrightarrow{OA} = \mathbf{a}$, $\overrightarrow{OB} = \mathbf{b}$ and $\overrightarrow{OC} = \mathbf{c}$. The point B lies on the line AC such that $AB:BC = m:n$, where m and n are constants.

(i) Write down $\overrightarrow{AB}$ in terms of **a** and **b**. [1]

(ii) Write down $\overrightarrow{BC}$ in terms of **b** and **c**. [1]

(iii) Hence show that $n\mathbf{a} + m\mathbf{c} = (m+n)\mathbf{b}$. [2]

(b) Given that $\lambda\begin{pmatrix}2\\1\end{pmatrix} + (\mu - 1)\begin{pmatrix}-4\\7\end{pmatrix} = (\lambda + 1)\begin{pmatrix}4\\-2\end{pmatrix}$, find the value of each of the constants λ and μ. [4]

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