The diagram shows a triangular prism ABC,DEF.

$\overrightarrow{AB} = \mathbf{t}$, $\overrightarrow{AC} = \mathbf{u}$ and $\overrightarrow{AD} = \mathbf{v}$.
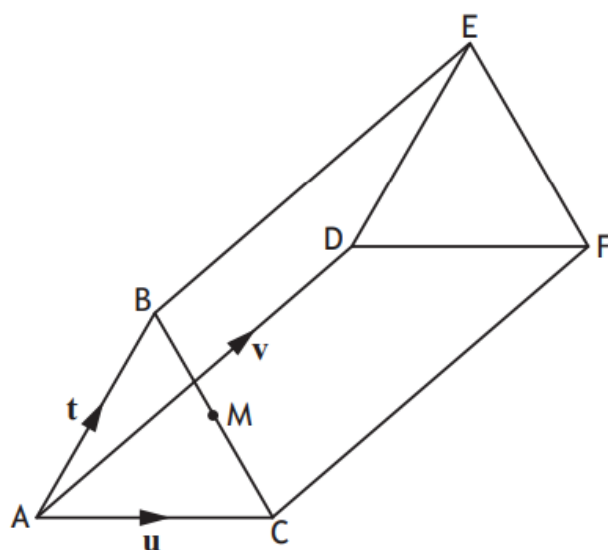
(a) Express $\overrightarrow{BC}$ in terms of **u** and **t**.   **1**

M is the midpoint of BC.

(b) Express $\overrightarrow{MD}$ in terms of **t**, **u** and **v**.   **2**

Answers:

(a) $-\mathbf{t}+\mathbf{u}$

(b) $-\dfrac{1}{2}\mathbf{t}-\dfrac{1}{2}\mathbf{u}+\mathbf{v}$