

4 The points A , B and C have position vectors $\begin{pmatrix} -2 \\ 1 \end{pmatrix}$, $\begin{pmatrix} 2 \\ 5 \end{pmatrix}$ and $\begin{pmatrix} 6 \\ 3 \end{pmatrix}$ respectively.

M is the midpoint of BC .

(a) Find the position vector of the point D such that $\overrightarrow{BC} = \overrightarrow{AD}$. **[3]**

(b) Find the magnitude of \overrightarrow{AM} . **[3]**