

9 The position vectors of the points A and B are $\overrightarrow{OA} = \begin{pmatrix} -1 \\ -2 \\ 0 \end{pmatrix}$ and $\overrightarrow{OB} = \begin{pmatrix} 2 \\ 1 \\ -3 \end{pmatrix}$ respectively.

(a) Write down the vector $\overrightarrow{AB}$.

[1]

The point C lies on AB such that $2\overrightarrow{AC} = \overrightarrow{CB}$.

(b) Find the vector $\overrightarrow{OC}$.

[2]