

- 3** Relative to an origin O , the position vectors of points A and B are given by

$$\overrightarrow{OA} = 2\mathbf{i} - 5\mathbf{j} - 2\mathbf{k} \quad \text{and} \quad \overrightarrow{OB} = 4\mathbf{i} - 4\mathbf{j} + 2\mathbf{k}.$$

The point C is such that $\overrightarrow{AB} = \overrightarrow{BC}$. Find the unit vector in the direction of \overrightarrow{OC} .

[4]