

4 The position vector of the point A is $0.5\mathbf{i} - 0.5\mathbf{j}$.

(a) Determine whether $0.5\mathbf{i} - 0.5\mathbf{j}$ is a unit vector. [2]

(b) Find the direction of $0.5\mathbf{i} - 0.5\mathbf{j}$, giving your answer in degrees. [2]

The position vector of the point B is $3.5\mathbf{i} + c\mathbf{j}$, where c is a constant.

(c) Given that $|\overrightarrow{AB}| = 5$, determine the possible values of c . [3]