Answer all ELEVEN questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 The position vector of the point A is $(3\mathbf{i} - 2\mathbf{j})$, referred to a fixed origin O.

The point B is such that $\overrightarrow{AB} = (6\mathbf{i} + 8\mathbf{j})$

(a) Find the position vector of B as a simplified expression in terms of **i** and **j**

(2)

(b) Find the magnitude of vector $\overrightarrow{AB}$

(1)

(c) Find a unit vector, in terms of **i** and **j**, that is parallel to $\overrightarrow{AB}$

(2)

Question 1 continued

(Total for Question 1 is 5 marks)