3 O, A and B are fixed points such that

$$\overrightarrow{OA} = 4\mathbf{i} + 3\mathbf{j} \qquad \overrightarrow{OB} = 8\mathbf{i} + p\mathbf{j} \quad \text{and} \quad \left|\overrightarrow{AB}\right| = 2\sqrt{13}$$

(a) Find the possible values of p.

(3)

Given that $p > 0$

(b) find a unit vector parallel to $\overrightarrow{AB}$

(2)

(Total for Question 3 is 5 marks)