14. In the triangle OAB

- $\overrightarrow{OA} = 3\mathbf{i} - 4\mathbf{j}$

- $\left| \overrightarrow{OB} \right| = 10$

- angle $AOB = 60°$

(a) Show that $\left| \overrightarrow{AB} \right| = 5\sqrt{3}$

(4)

Given further that $\overrightarrow{BA} = 4\sqrt{3}\,\mathbf{i} + p\,\mathbf{j}$, where p is a positive constant,

(b) find $\overrightarrow{OB}$, giving your answer using $\mathbf{i}$, $\mathbf{j}$ notation.

(4)