13. Relative to a fixed origin O

- point A has position vector $\mathbf{i} - 3\mathbf{j}$

- point B has position vector $7\mathbf{i} + 5\mathbf{j}$

Given that the point C is such that $2\overrightarrow{AB} = \overrightarrow{BC}$

(a) find the position vector of C.

(2)

Relative to O, point D has position vector $2\mathbf{i} + (p - 4)\mathbf{j}$ where p is a constant.

The points A, B and D form the triangle ABD.

Given that $\left|\overrightarrow{AD}\right| = \sqrt{17}$

(b) find the largest possible size of angle DAB.
    Give your answer in degrees to one decimal place.

(5)