23 OAB is a triangle.

$\overrightarrow{OA} = \mathbf{a}$ $\overrightarrow{OB} = \mathbf{b}$

C is the midpoint of OA.
D is the point on AB such that $AD : DB = 3 : 1$
E is the point such that $\overrightarrow{OB} = 2\overrightarrow{BE}$

Using a vector method, prove that the points C, D and E lie on the same straight line.

(Total for Question 23 is 5 marks)

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