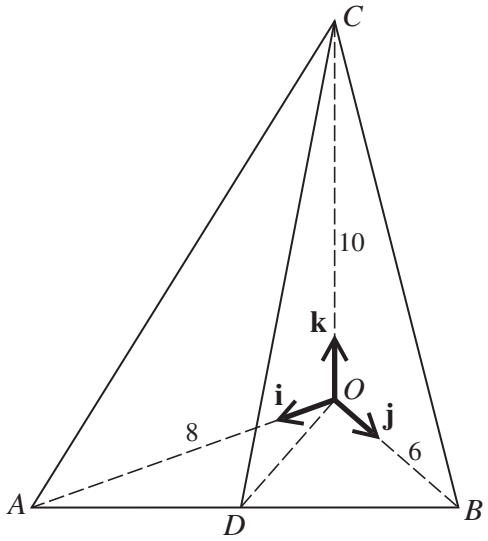
4



The diagram shows a pyramid $OABC$ in which the edge OC is vertical. The horizontal base OAB is a triangle, right-angled at O, and D is the mid-point of AB. The edges OA, OB and OC have lengths of 8 units, 6 units and 10 units respectively. The unit vectors **i**, **j** and **k** are parallel to $\overrightarrow{OA}$, $\overrightarrow{OB}$ and $\overrightarrow{OC}$ respectively.

(i) Express each of the vectors $\overrightarrow{OD}$ and $\overrightarrow{CD}$ in terms of **i**, **j** and **k**. [2]

(ii) Use a scalar product to find angle ODC. [4]