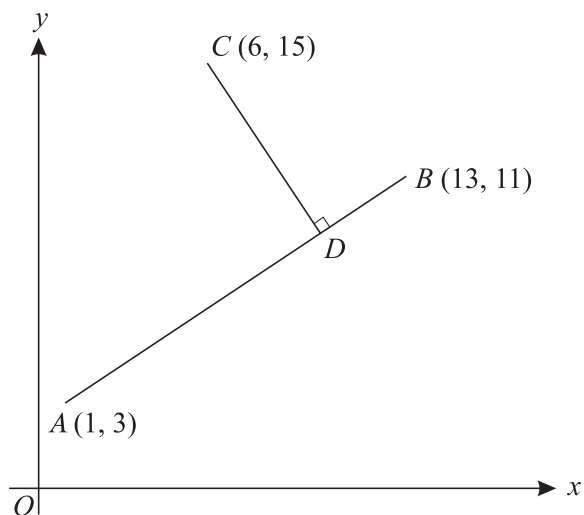**5**

The three points $A\,(1,\,3)$, $B\,(13,\,11)$ and $C\,(6,\,15)$ are shown in the diagram. The perpendicular from C to AB meets AB at the point D. Find

  (i) the equation of CD,   [3]

  (ii) the coordinates of D.   [4]