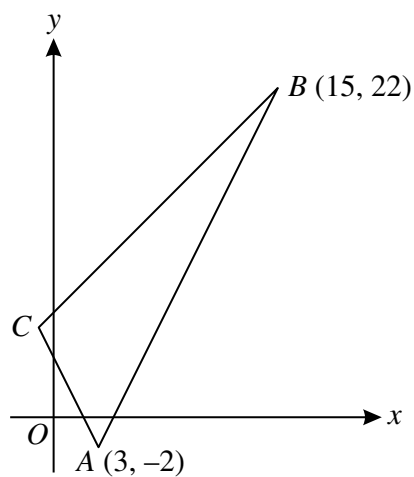


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The diagram shows a triangle ABC in which A is $(3, -2)$ and B is $(15, 22)$. The gradients of AB , AC and BC are $2m$, $-2m$ and m respectively, where m is a positive constant.

(i) Find the gradient of AB and deduce the value of m . [2]

(ii) Find the coordinates of C . [4]

The perpendicular bisector of AB meets BC at D .

(iii) Find the coordinates of D . [4]