

**11** Triangle  $ABC$  has vertices at  $A(-2, -1)$ ,  $B(4, 6)$  and  $C(6, -3)$ .

(i) Show that triangle  $ABC$  is isosceles and find the exact area of this triangle. [6]

(ii) The point  $D$  is the point on  $AB$  such that  $CD$  is perpendicular to  $AB$ . Calculate the  $x$ -coordinate of  $D$ . [6]