

- 6 The point  $A$  has coordinates  $(3, 0)$  and the point  $B$  has coordinates  $(2, 2)$ .  
The line  $L_1$  passes through  $B$  and is perpendicular to  $AB$ .

- (a) Find an equation of  $L_1$

Give your answer in the form  $ax + by + c = 0$

(5)

The line  $L_2$  with equation  $x - 7y - 3 = 0$  intersects the line  $L_1$  at the point  $C$ .  
The midpoint of  $AC$  is  $M$ .

- (b) Find the coordinates of  $M$ .

(5)

- (c) Find the area of the triangle  $ABM$ .

(4)

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**Question 6 continued**

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**(Total for Question 6 is 14 marks)**

P 5 9 9 3 8 A 0 1 9 3 6