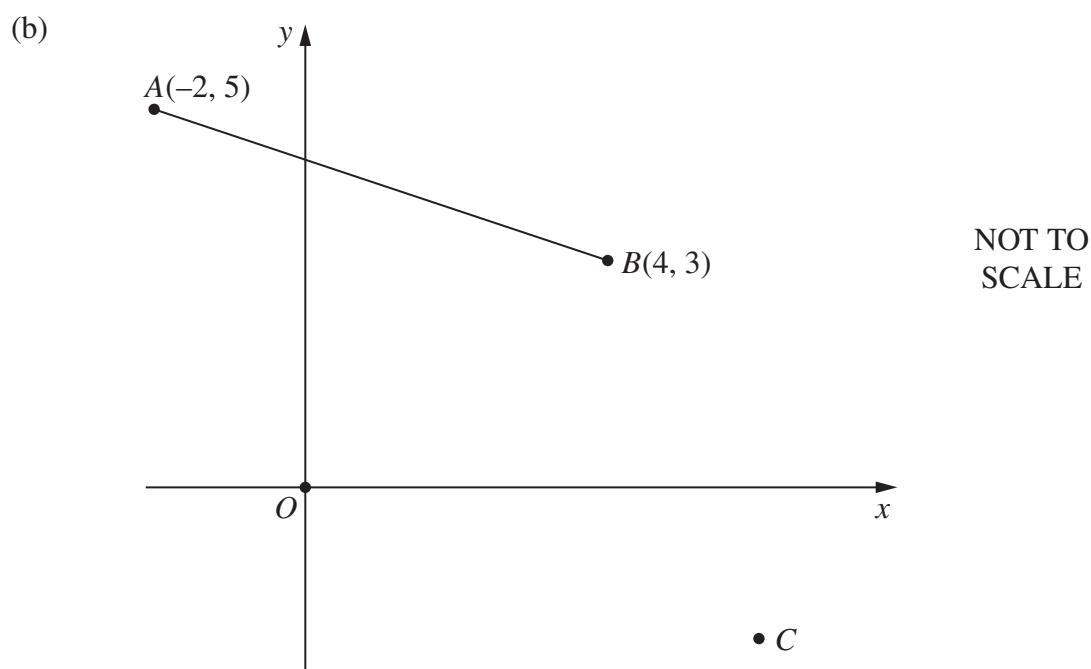


Question 2 (12 marks) Use a SEPARATE writing booklet.

- (a) Find the equation of the tangent to the curve $y = x^2 + 3x$ at the point $(1, 4)$. 3



The diagram shows the points $A(-2, 5)$, $B(4, 3)$ and $O(0, 0)$. The point C is the fourth vertex of the parallelogram $OABC$.

- (i) Show that the equation of AB is $x + 3y - 13 = 0$. 2
- (ii) Show that the length of AB is $2\sqrt{10}$. 1
- (iii) Calculate the perpendicular distance from O to the line AB . 2
- (iv) Calculate the area of parallelogram $OABC$. 2
- (v) Find the perpendicular distance from O to the line BC . 2