

# Coordinate Geometry

## Question Paper 2

Level	International A Level
Subject	Maths
Exam Board	CIE
Topic	Coordinate Geometry
Sub Topic	
Booklet	Question Paper 2

Time Allowed: **58 minutes**

Score: **/48**

Percentage: **/100**

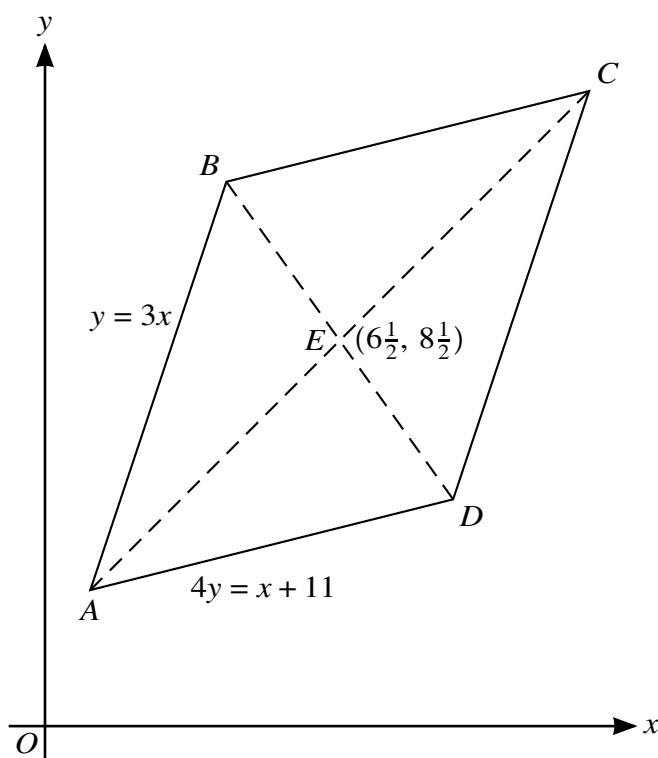
Grade Boundaries:

A*	A	B	C	D	E	U
>85%	'77.5%	70%	62.5%	57.5%	45%	<45%

1 The coordinates of points  $A$  and  $B$  are  $(a, 2)$  and  $(3, b)$  respectively, where  $a$  and  $b$  are constants. The distance  $AB$  is  $\sqrt{125}$  units and the gradient of the line  $AB$  is 2. Find the possible values of  $a$  and of  $b$ . [6]

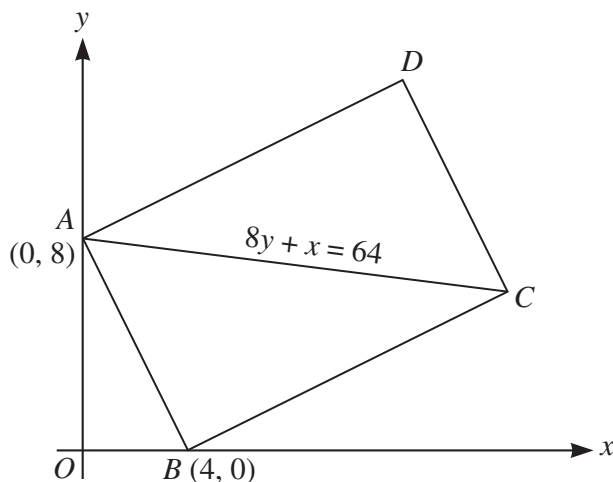
2 Find the coordinates of the point at which the perpendicular bisector of the line joining  $(2, 7)$  to  $(10, 3)$  meets the  $x$ -axis. [5]

3



The diagram shows a parallelogram  $ABCD$ , in which the equation of  $AB$  is  $y = 3x$  and the equation of  $AD$  is  $4y = x + 11$ . The diagonals  $AC$  and  $BD$  meet at the point  $E(6\frac{1}{2}, 8\frac{1}{2})$ . Find, by calculation, the coordinates of  $A$ ,  $B$ ,  $C$  and  $D$ . [9]

4



The diagram shows a rectangle  $ABCD$  in which point  $A$  is  $(0, 8)$  and point  $B$  is  $(4, 0)$ . The diagonal  $AC$  has equation  $8y + x = 64$ . Find, by calculation, the coordinates of  $C$  and  $D$ . [7]

5 The point  $A$  has coordinates  $(3, 1)$  and the point  $B$  has coordinates  $(-21, 11)$ . The point  $C$  is the mid-point of  $AB$ .

(i) Find the equation of the line through  $A$  that is perpendicular to  $y = 2x - 7$ . [2]

(ii) Find the distance  $AC$ . [3]

6 A curve has equation  $y = x^2 - 4x + 4$  and a line has equation  $y = mx$ , where  $m$  is a constant.

(i) For the case where  $m = 1$ , the curve and the line intersect at the points  $A$  and  $B$ . Find the coordinates of the mid-point of  $AB$ . [4]

(ii) Find the non-zero value of  $m$  for which the line is a tangent to the curve, and find the coordinates of the point where the tangent touches the curve. [5]

7 The point  $R$  is the reflection of the point  $(-1, 3)$  in the line  $3y + 2x = 33$ . Find by calculation the coordinates of  $R$ . [7]