1 The diagram shows three points, *A*, *B* and *C*, marked on a grid.

(a) Write down the coordinates of point *A*.

(............................ , ...)

(1)

The coordinates of the point *D* are (–2, –4)

(b) On the grid, mark with a cross (×) the position of *D*.
Label the cross *D*.
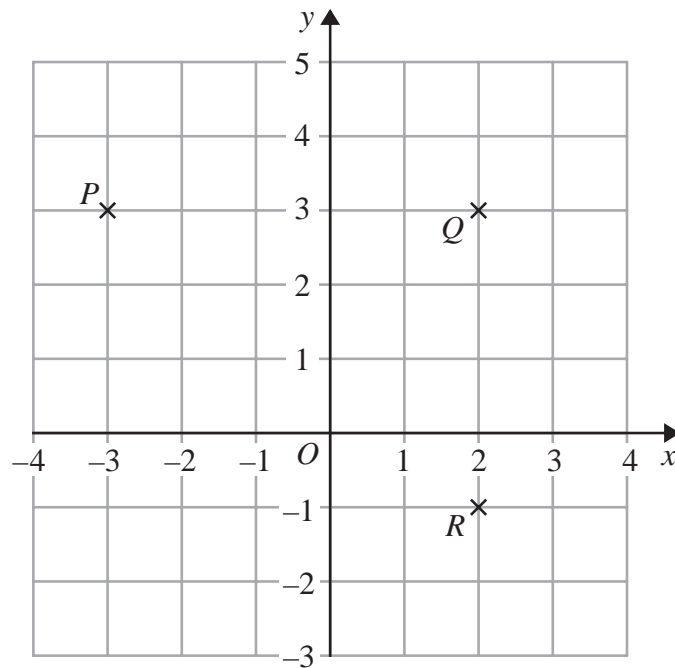
(1)

(c) Find the coordinates of the midpoint of *BC*.

(............................ , ...)

(2)

(d) On the grid, draw the line with equation $x = 4$

(1)

(Total for Question 1 is 5 marks)

2 *P*, *Q* and *R* are three points marked on a grid.

(a) Write down the coordinates of point *Q*.

(.......................... , ...)

(1)

S is the point such that *PQRS* is a rectangle.

(b) Find the coordinates of point *S*.

(.......................... , ...)

(1)

(c) Find the coordinates of the midpoint of *PR*.

(.......................... , ...)

(2)

(Total for Question 2 is 4 marks)

3 The point *A* has coordinates (5, −4)
The point *B* has coordinates (13, 1)

(a) Work out the coordinates of the midpoint of *AB*.

(........................ , ...)

(2)

Line **L** has equation $y = 2 - 3x$

(b) Write down the gradient of line **L**.

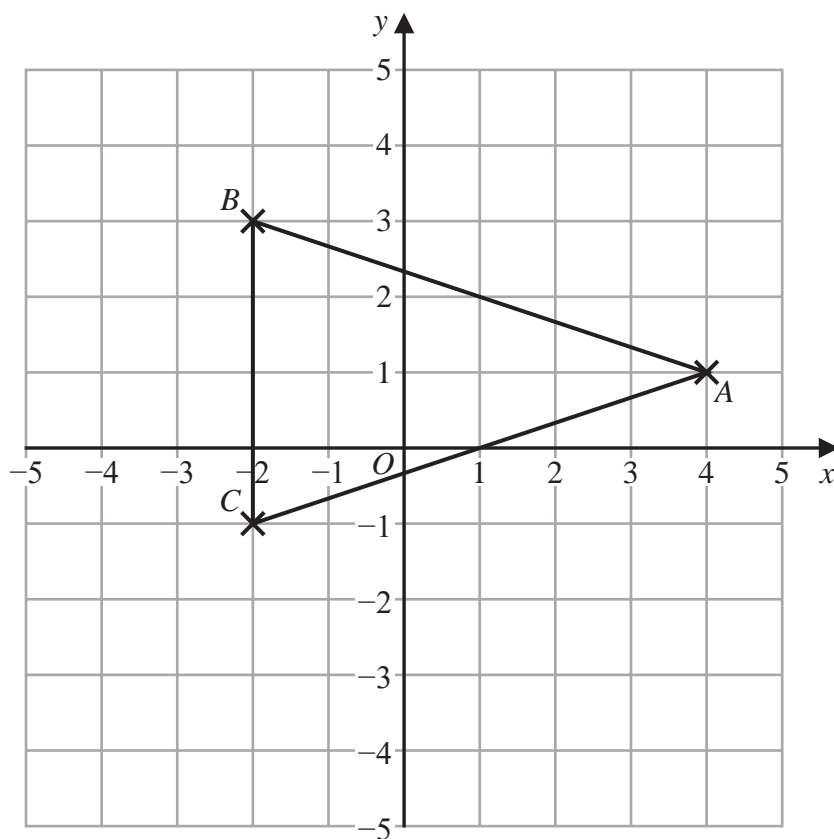...

(1)

Line **L** has equation $y = 2 - 3x$

(c) Does the point with coordinates (100, −302) lie on line **L**?
You must give a reason for your answer.

....

....

....

(1)

(Total for Question 3 is 4 marks)

4 The points *A*, *B* and *C*, shown on the grid, are the vertices of triangle *ABC*.

(a) Write down the coordinates of the point *B*.

(.......................... , ...)

(1)

(b) Write down the mathematical name of triangle *ABC*.

....

(1)

The coordinates of point *D* are (1, −4)

(c) On the grid, mark with a cross (×) the position of *D*.
Label the point *D*.

(1)
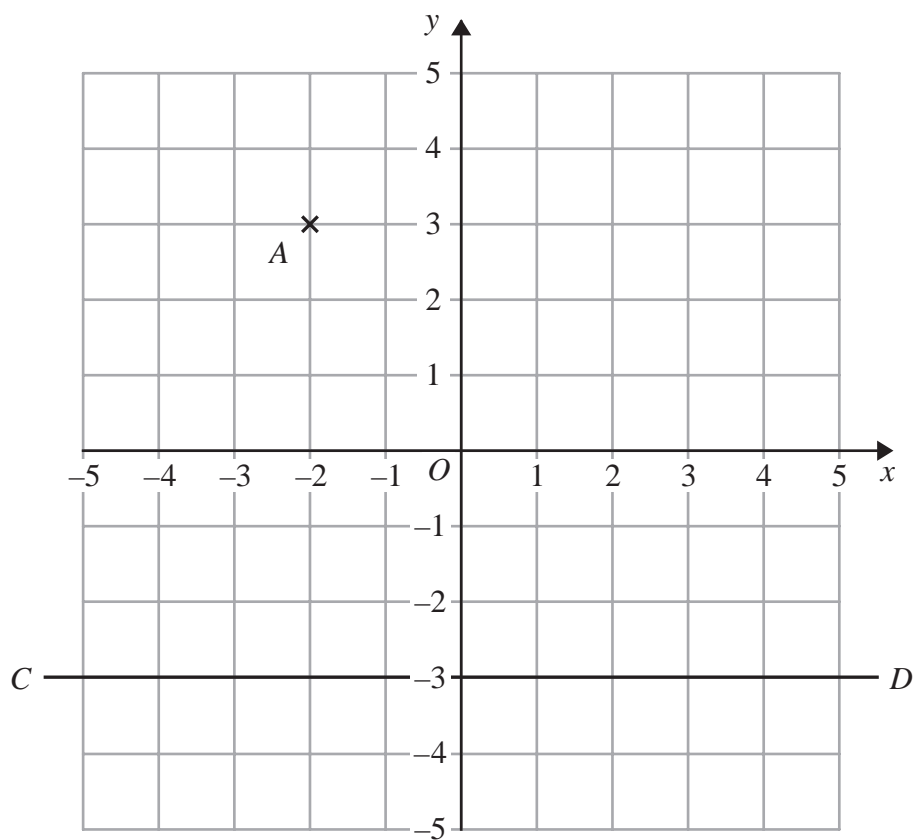
(d) Find the coordinates of the midpoint of *AB*.

(.......................... , ...)

(2)

(Total for Question 4 is 5 marks)

5 The diagram shows the point *A* and the line *CD* on a grid.

(a) Write down the coordinates of point *A*.

(........................ , ...)

(1)

The point *B* has coordinates (4, –2)

(b) On the grid, mark with a cross (✗) the point *B*.
    Label the point *B*.

(1)

(c) Write down an equation of the line *CD*.

....

(1)

(Total for Question 5 is 3 marks)

6 The three points *A*, *B* and *C* are marked on a centimetre grid.
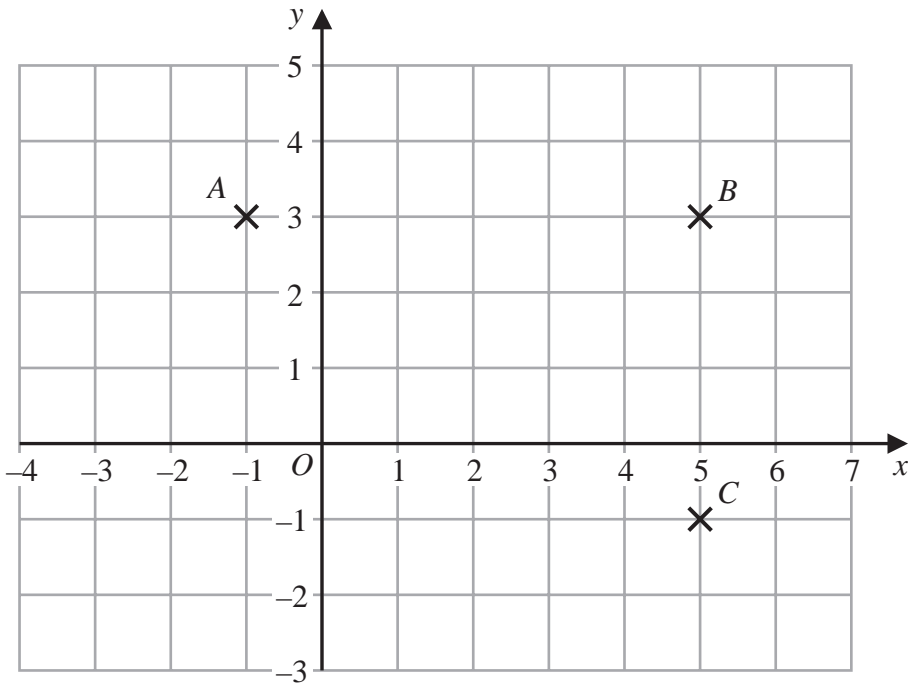
(a) Write down the coordinates of *A*

(................................ , ...)

(1)

(b) Find the coordinates of the midpoint of *BC*

(................................ , ...)

(2)

(c) Work out the area of triangle *ABC*

.... cm^2

(2)

D is the point on the grid so that *ABCD* is a rectangle.

(d) On the grid, mark with a cross (×) the point *D*
   Label this point *D*

(1)

(Total for Question 6 is 6 marks)

7 Two circles, C_1 and C_2, are drawn on a centimetre grid, with a scale of 1 cm for 1 unit on each axis.

The centre of circle C_1 is at the point with coordinates (–1, 3) and the radius of C_1 is 13 cm.

The centre of circle C_2 is at the point with coordinates (7, 18) and the radius of C_2 is 6 cm.

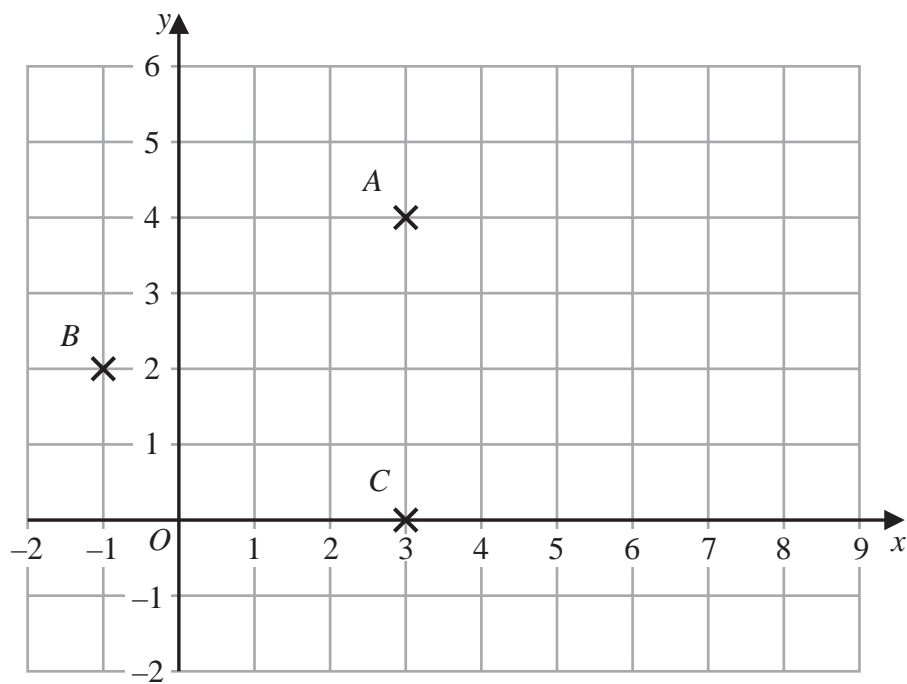(a) Work out the distance between the centre of C_1 and the centre of C_2

.... cm

(3)

(b) Explain why circle C_1 intersects circle C_2

....

....

(1)

(Total for Question 7 is 4 marks)

8   The diagram shows three points, *A*, *B* and *C*, on a grid.

(a) Write down the coordinates of

(i) point *A*

(.......................... , ...)

(ii) point *B*

(.......................... , ...)

(2)

D is the point such that *ABCD* is a rhombus.

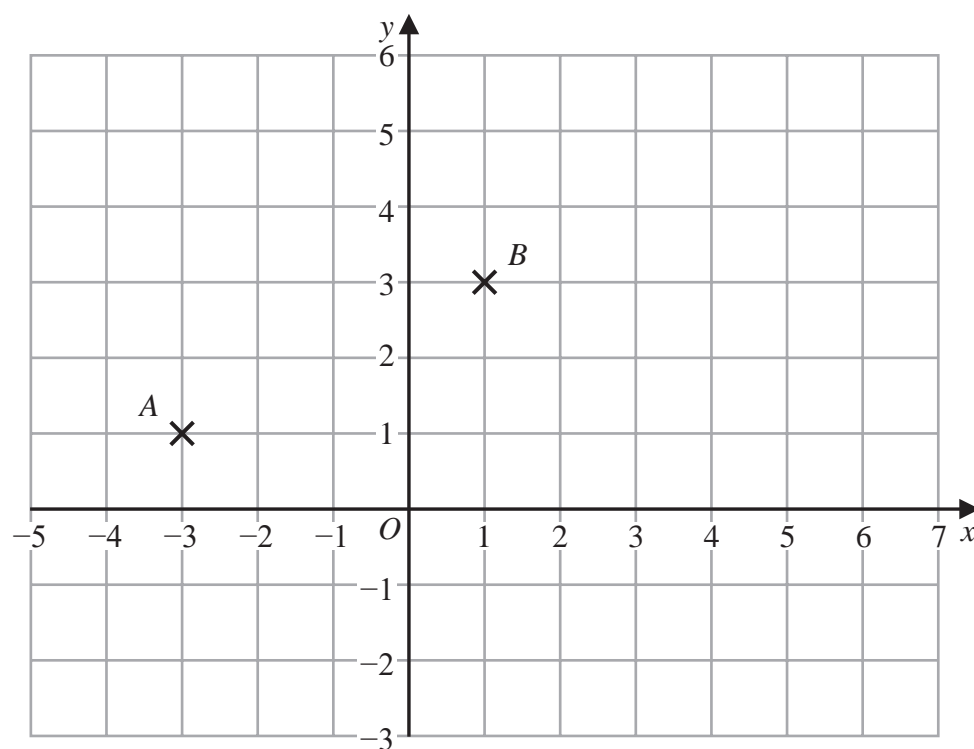(b) On the grid, mark with a cross (×) the point *D*
Label this point *D*

(1)

(c) Find the coordinates of the midpoint of *AB*

(.......................... , ...)

(2)

(Total for Question 8 is 5 marks)

9 The diagram shows points *A* and *B* marked on a grid of squares.

M is the midpoint of *AB*

(b) Find the coordinates of *M*

(.......................... , ...)

(2)

(Total for Question 9 is 2 marks)

10   The diagram shows three points, *A*, *B* and *C*, and a line *EF* on a grid.
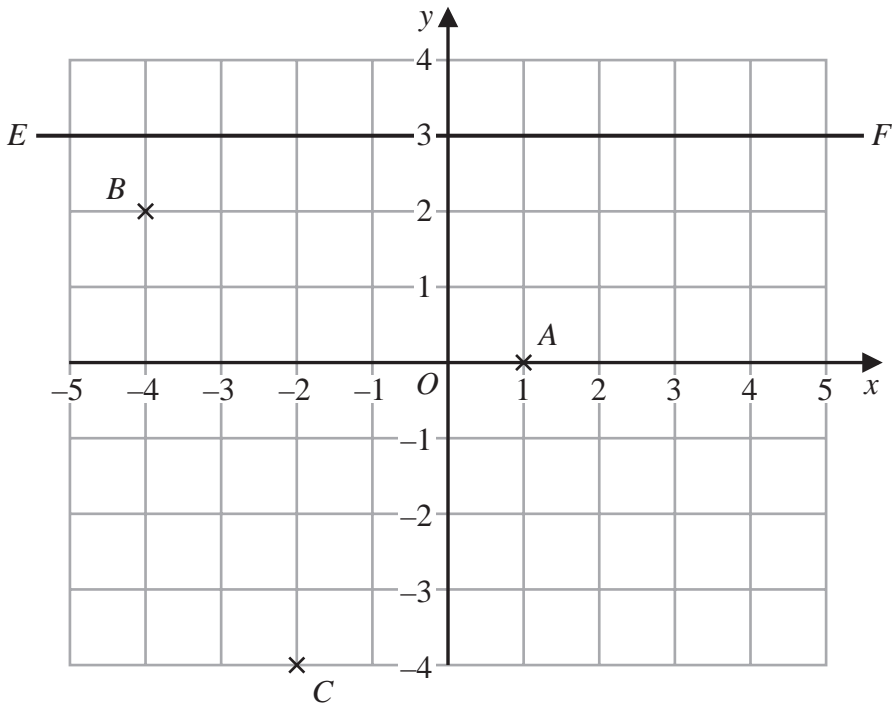
(a) Write down the coordinates of the point *A*

(.......................... , ...)

(1)

The coordinates of the point *D* are (3, –2)

(b) On the grid, mark with a cross (×) the position of *D*
      Label the cross *D*

(1)

(c) Find the coordinates of the midpoint of *BC*

(.......................... , ...)

(2)

(d) Write down the equation of the line *EF*

....

(1)

(Total for Question 10 is 5 marks)

11 The points A and B are on a coordinate grid.

The coordinates of A are $(6, 4)$
The coordinates of B are $(17, j)$ where j is a constant.

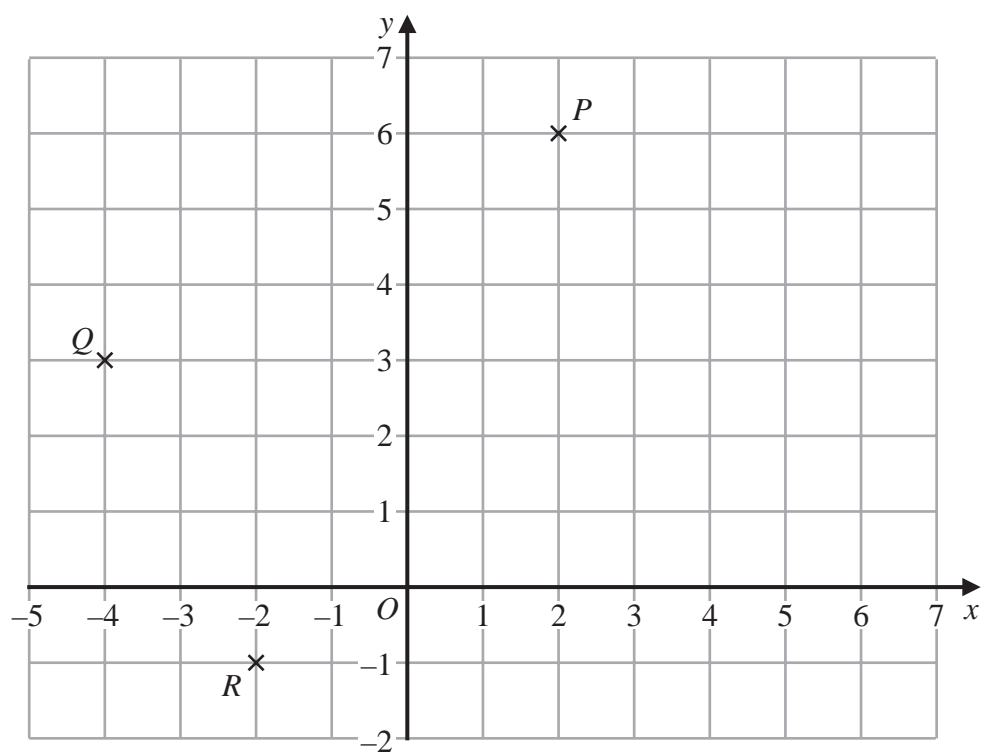The midpoint of AB has coordinates $(k, 15)$ where k is a constant.

Find the value of j and the value of k

$j =$ ....

$k =$ ....

(Total for Question 11 is 3 marks)

12

(a) Write down the coordinates of the point

   (i) *P*

(.......................... , ...)

(1)

   (ii) *Q*
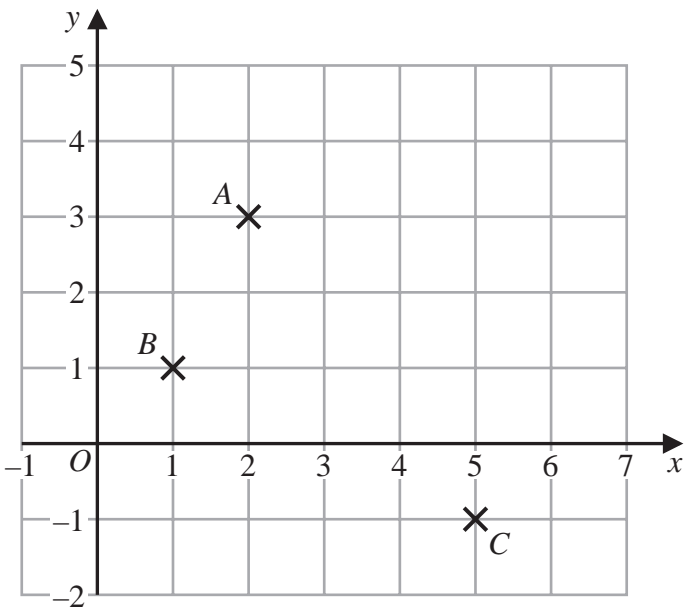
(.......................... , ...)

(1)

(b) On the grid above, mark with a cross (×) the point *S* so that *PQRS* is a rectangle.

(1)

(Total for Question 12 is 3 marks)

13 The diagram shows three points, *A*, *B* and *C*, marked on a grid.

(a) Write down the coordinates of point *A*

(.......................... , ...)

(1)

(b) On the grid, mark with a cross (×) the point *D* so that *ABCD* is a rectangle.

(1)

(c) Find the coordinates of the midpoint of *AC*

(.......................... , ...)

(2)

(d) On the grid, draw the line with equation $y = 4$

(1)

(Total for Question 13 is 5 marks)