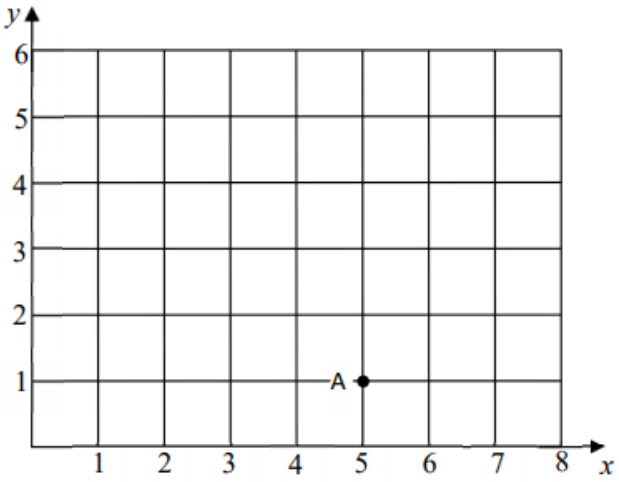
Coordinates

Paper 1

12. A, B and C and D are 4 points on a grid. A is at (5, 1), B is at (1, 1) and C is at (1, 3) and D is at (5, 4).



(a) Plot the points B, C and D and then connect them to form the quadrilateral ABCD.

[1]

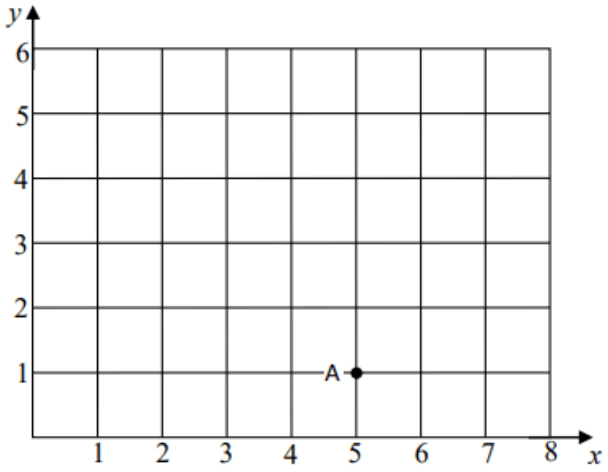
(b) State what type of quadrilateral has been formed.

Answer: _____ [1]

(c) The side length of each small square in the grid is 1 cm. Work out the area of the quadrilateral ABCD.

Answer: _____ cm^2 [2]

13. A, B and C are 3 points on a grid. A is at (5, 1), B is at (1, 1) and C is at (3, 5).



(a) Plot the points B and C and then join A to B, B to C and C to A. [2]

(b) State what type of triangle has been formed.

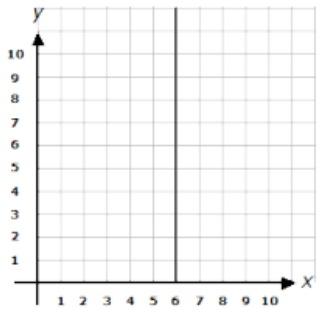
Answer: _____ [1]

The points A, B, C and a new point D will form a parallelogram when joined in that order.

(c) Write down the co-ordinates of D.

Answer: D is at (____ , ____) [2]

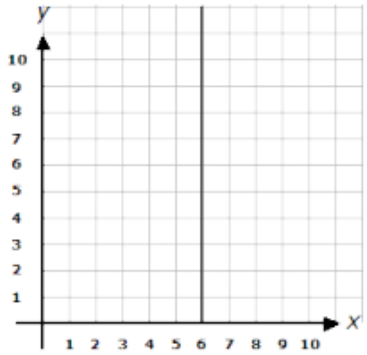
28.



b. A straight vertical line is drawn so that it passes through 6 on the x axis. This line is shown on the grid already. On the same grid reflect the rectangle ABCD in the line and write down the co-ordinates of all four corners of your new shape.

c. If, instead, the vertical line had passed through 20 on the x axis and you reflected ABCD in the new line, what would the co-ordinates of all four corners of your new shape be?

28.



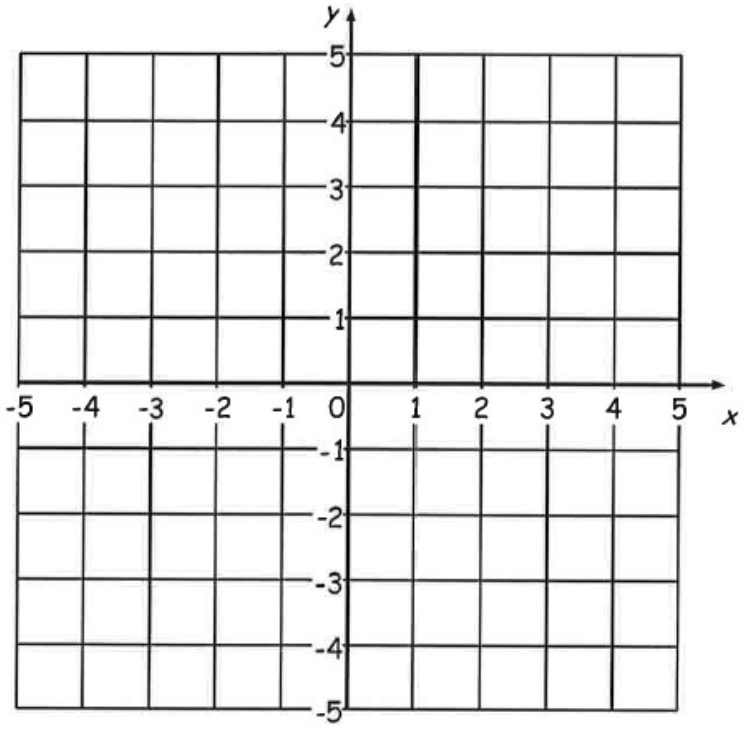
a. One the grid above plot all four of the following points and label them A, B, C and D. Join your points to form a rectangle.

A(3, 3)
B(5, 3)
C(5, 7)
D(3, 7)

A7 The diagram below shows a set of coordinate grids. Notice that the x-coordinates are negative at the left and positive at the right. The y-coordinates are negative at the bottom and positive at the top.

i) Plot the points (4, 1), (−2, 3), (−4, 1) and (−2, −1). **[4]**

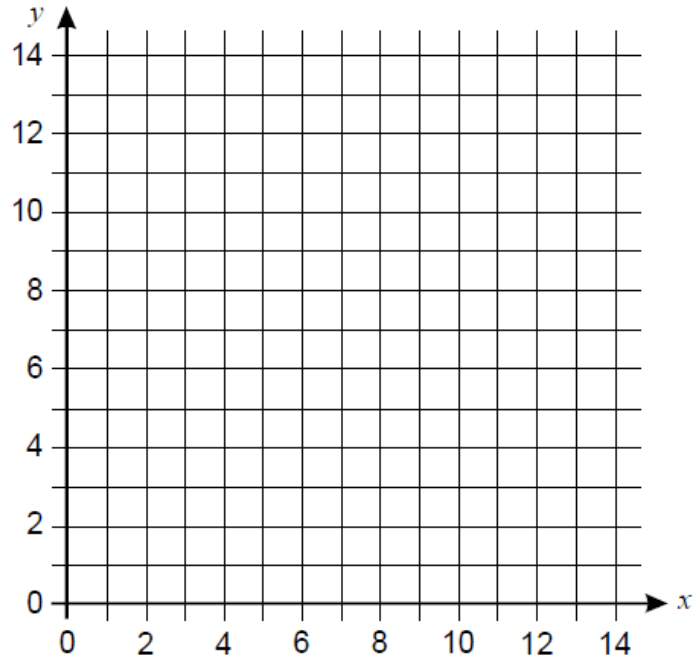
ii) Join the four points up in order, and then join the last point up to the first one. **[1]**



What name best describes the shape you have drawn?

Answer: **[1]**

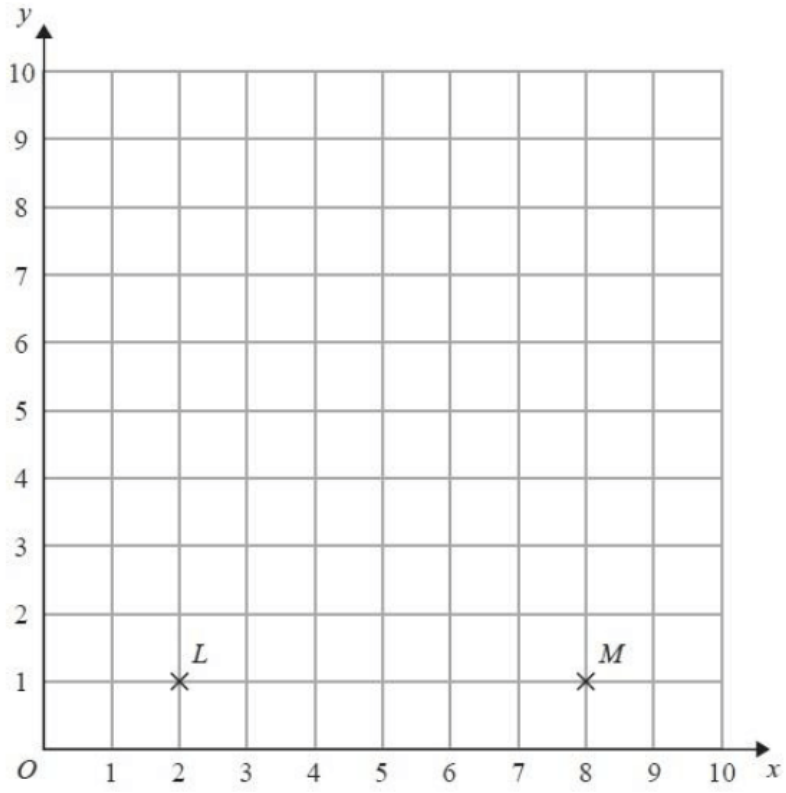
24. (a) Plot the points (8, 12) and (5,12) on the grid below and join the points up to make a straight line.



(b) Tick the correct statement:

This line is horizontal ☐ This line is vertical ☐ *3 marks*

26. Here is a coordinate grid.



(a) Write down the coordinates of the point M.

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

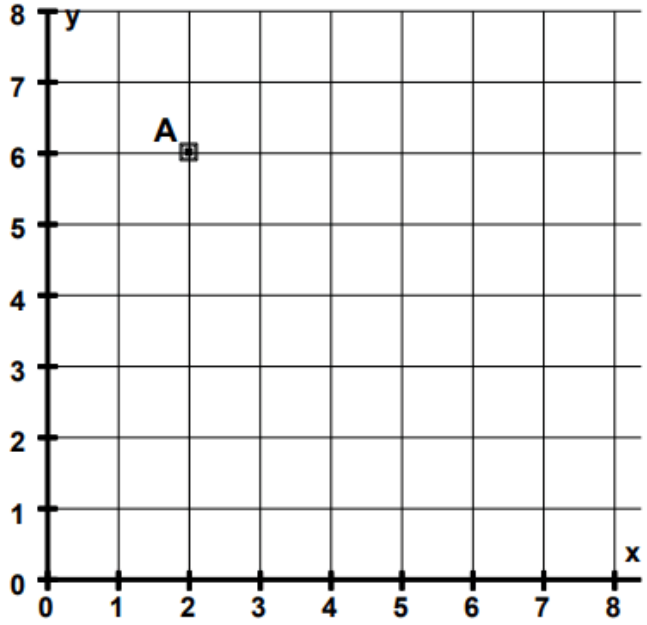
(1 mark)

LM is the shortest side of an isosceles triangle.

(b) Mark with a cross (×) a point N, so that LNM is an isosceles triangle.

(2 marks)

9.



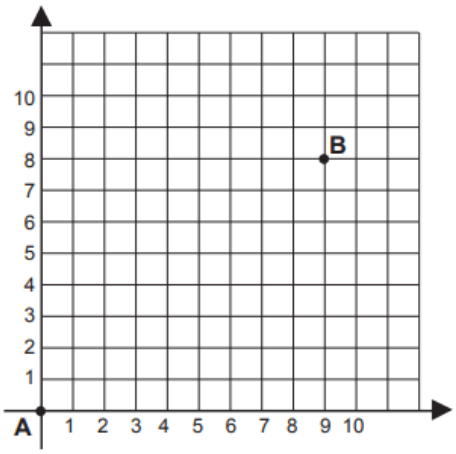
a) Write down the coordinates of point A

b) Plot the points B (2, 4) and C (6, 5). Join points A, B and C to form a triangle.

c) What type of triangle is ABC ?

d) What is the area of this triangle?

12.



A point is described by its coordinates, eg point B on the diagram has coordinates (9,8). This is **not the same** as (8,9). Point A has coordinates (0,0).

To move from one point to another on the graph you can travel by K-steps or by T-steps.

A K-step moves you 1 place to the right and 2 places up

A T-step moves you 3 places to the right and 1 place up.

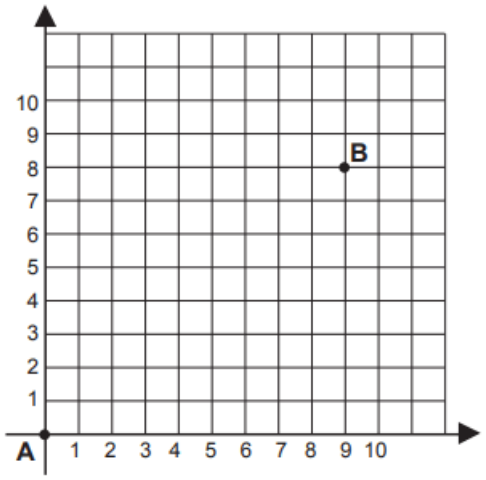
(c) To get from point C (which is not shown on the diagram) to point B you need to take one K-step and two T-steps. Write down the coordinates of the point C.

12c	(,)

(d) Starting from point B, and then doing a U-step, a K-step and a T-step, you finish up at a point D (not shown). Write down the coordinates of point D.

12d	(,)

12.



A point is described by its coordinates, eg point B on the diagram has coordinates (9,8). This is **not the same** as (8,9). Point A has coordinates (0,0).

To move from one point to another on the graph you can travel by K-steps or by T-steps.

A K-step moves you 1 place to the right and 2 places up

A T-step moves you 3 places to the right and 1 place up.

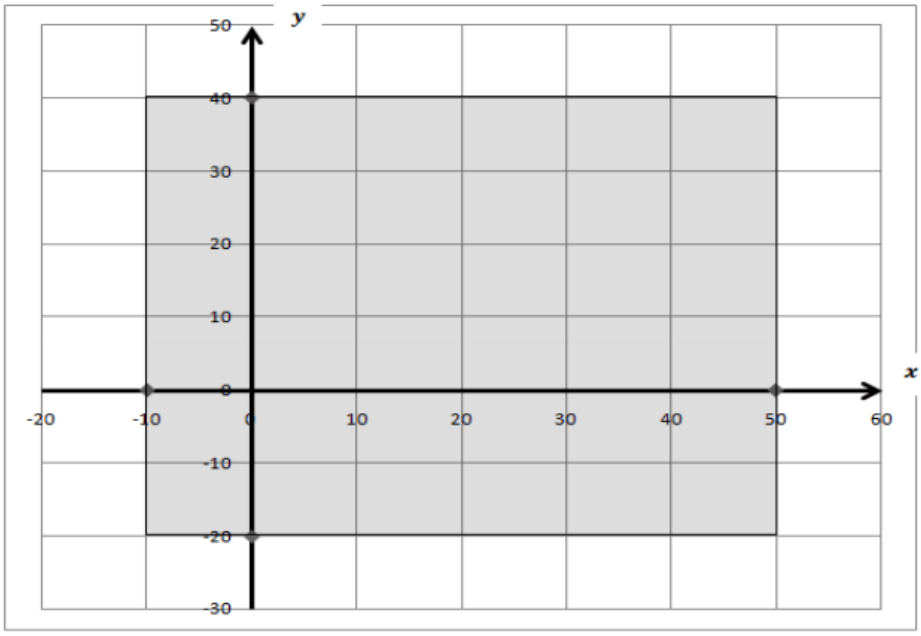
(a) Starting from point A, what would your coordinates be after a K-step followed by a T-step?

12a	(,)

(b) It is possible to move from point A to point B by combining some K-steps and some T-steps. Write down how many K-steps and T-steps are needed.

12b	K-steps
	T-steps

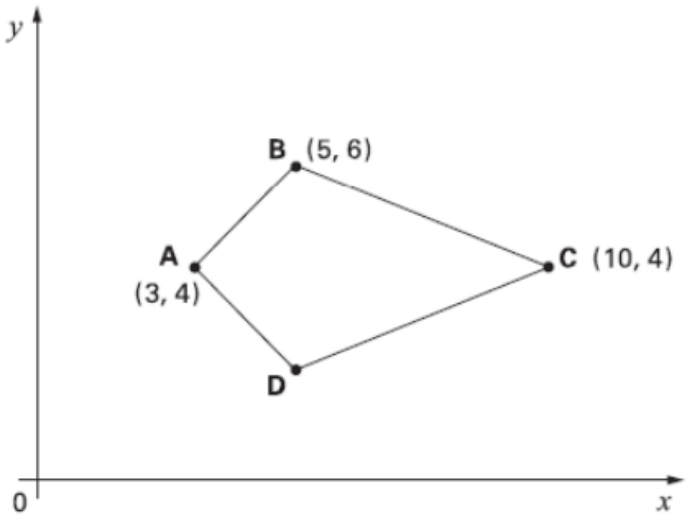
23. Here is a shaded rectangle on x and y axes.



For each of the co-ordinates (points on the graph) shown in the table below, put a tick to show if it is inside or outside the shaded square. One has been done for you.

		INSIDE	OUTSIDE
A	**(20, 30)**	✓	
B	**(30 , -10)**		
C	**(-20 , -20)**		
D	**(45 , 60)**		
E	**(-5 , 35)**		

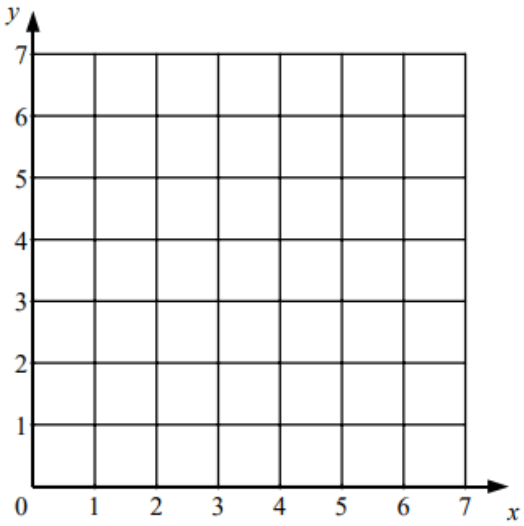
24.



ABCD is a kite.
Write down the coordinates of vertex D.

Answer…….....

19.



a) On the grid above, plot and label the points $A(0,3)$, $B(2,5)$, $C(6,3)$ and $D(2,1)$.

[4]

b) Join ABCD.

[1]

c) What name is given to this shape?

Answer: _____ [1]

d) Find the coordinates of the point of intersection of the diagonals.

Answer: _____ [2]

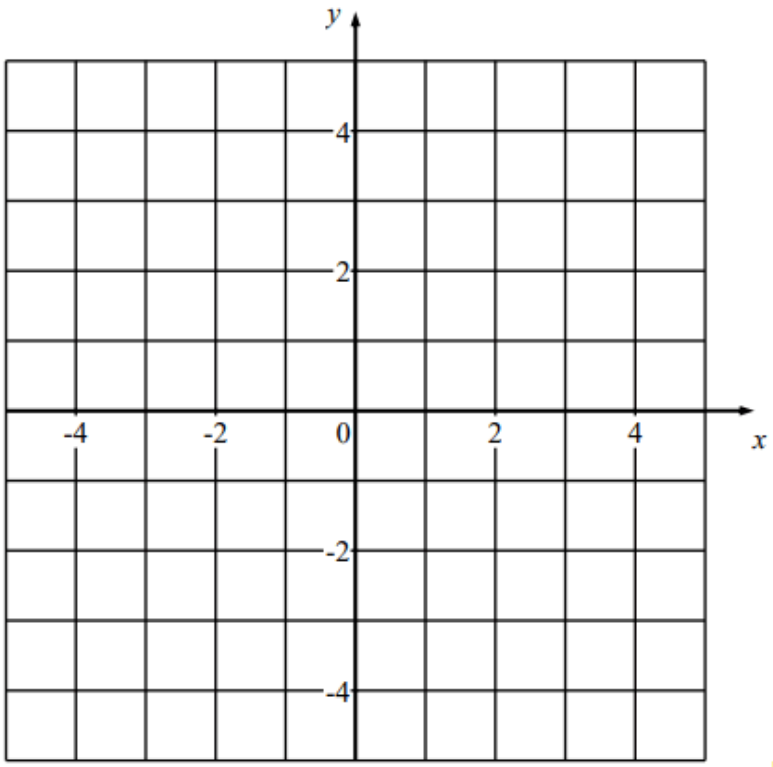
e) Draw on any lines of symmetry.

[1]

f) Calculate the area of ABCD.

Answer: _____ cm^2 [4]

12. (a) Mark the points A(–2, 0), B(2, 0) and C(0, –3) on the axes below, labelling each point clearly.



[3]

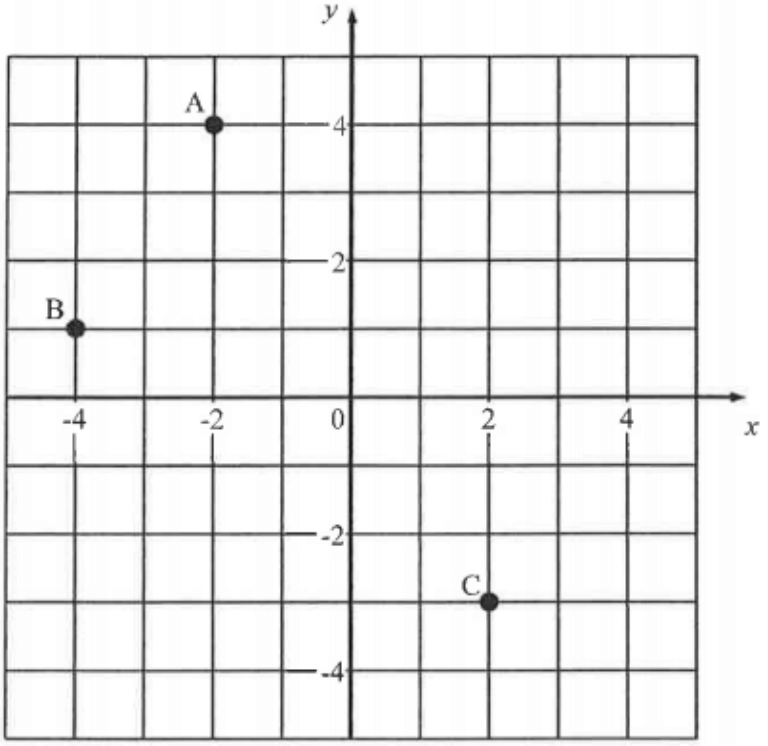
(b) The y co-ordinate of point D is 4 and ABCD is a kite. Write down the x co-ordinate of D.

Answer: _____ [1]

(c) The point E is such that ABCE is a rhombus. Write down the co-ordinates of the point E.

Answer: E is at (____ , ____) [2]

6. The grid below contains three points, labelled A, B and C.
A has co-ordinates (–2, 4) and B has co-ordinates (–4, 1).



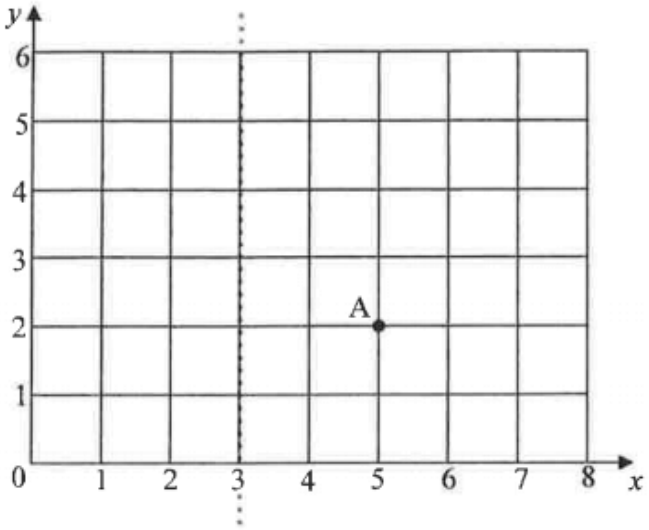
(a) Write down the co-ordinates of the point C.

Answer: C is at (____ , ____)
[2]

(b) Add a fourth point to the grid, labelling it D, so that when they are joined in the order ABCD the four points create a rectangle. Write the co-ordinates of point D below.

Answer: D is at (____ , ____)
[2]

12. A, B and C are three points on a grid. A is at (5, 2), B is at (4, 5) and C is at (3, 0).



(a) Plot and label the other two points, B and C, and then join the three points and lightly shade the triangle you have formed.

[2]

(b) State the name of the type of triangle that has been formed.

Answer:_____ [1]

A mirror line is marked as the dotted line at $x = 3$. The triangle can be reflected in this mirror line so that point A ends up at a new point D and point B ends up at a new point E.

(c) Draw the reflected image of the triangle across this mirror line and label the two new points D and E.

[2]

(d) Write down the co-ordinates of these new points D and E:

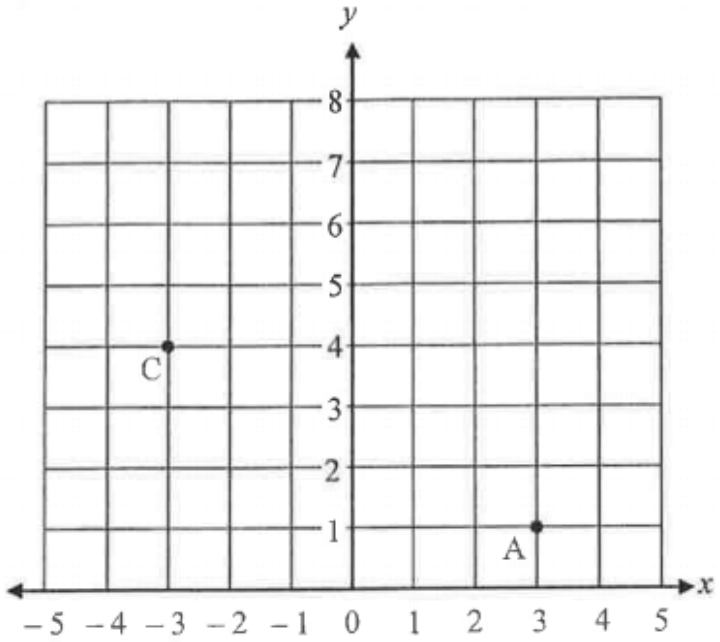
Answer: D is at (___ , 2) and E is at (___ , ___) [3]

(e) Write down which new point completes this triangle in the diagram and explain briefly what it means for a triangle to be isosceles.

Point _____ will form an isosceles because an isosceles triangle _____

_____ [2]

14. On the axes below, point A has coordinates (3,1).



(a) Write down the coordinates of point C.

Answer: (_____ , _____) [1]

(b) Plot the point with coordinates (5, 4) onto the axes **and label it B.**

[1]

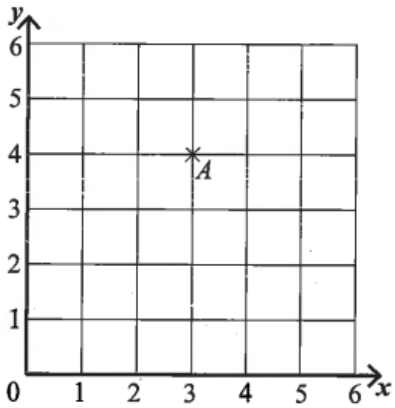
(c) Plot another point, D, and then join ABCD **in that order** so that you form a quadrilateral shape with one line of symmetry.

[2]

(d) Write down the common name for the quadrilateral ABCD.

Answer: _____ [1]

24. Point A has been plotted on the coordinate grid below.



(a) Write down the coordinates of point A.

Answer: (..... , ...)

Point B has coordinates (2, 1).

Point C has coordinates (5, 2).

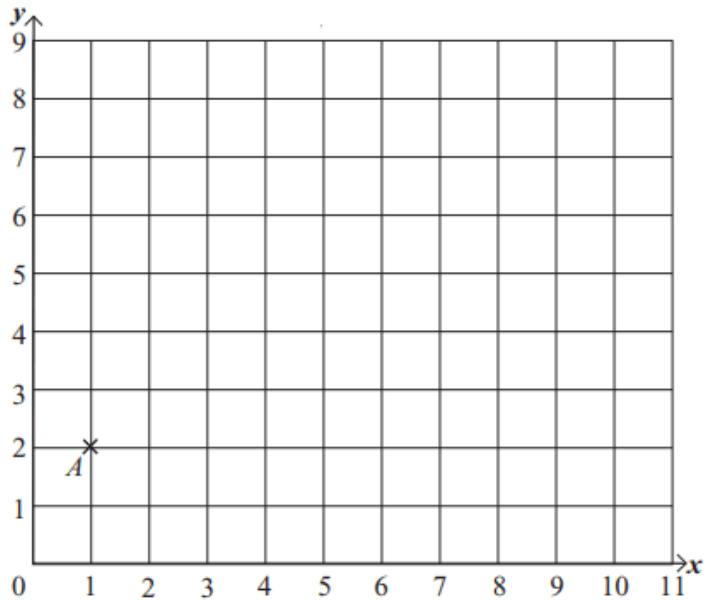
(b) Plot and label points B and C.

Point D can be plotted so that when point A, B, C and D are joined in order, they form a rhombus.

(c) Write down the coordinates of the point D.

Answer: (..... , ...)

27. Point A is plotted on the coordinate grid below.



Point B has coordinates (7, 8)

(a) On the grid above, plot and label point B.

Point M is exactly halfway between points A and B.

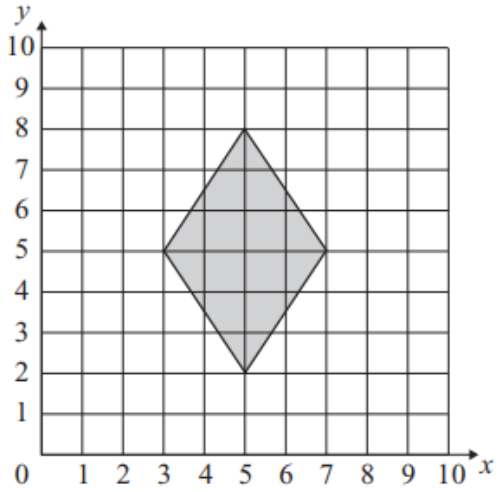
(b) What are the coordinates of point M?

Answer: (..... , ...)

(c) Write down the coordinates of any other point which is exactly the same distance from point A as it is from point B.

Answer: (..... , ...)

38. A rhombus has been drawn on the grid below.



The co-ordinates of three points are listed below.

$P(5, 3)$ $Q(5, 9)$ $R(4, 4)$

Write the letter names of the points that lie inside the rhombus.

Answer: .....