

Using coordinates to locate shapes (I)

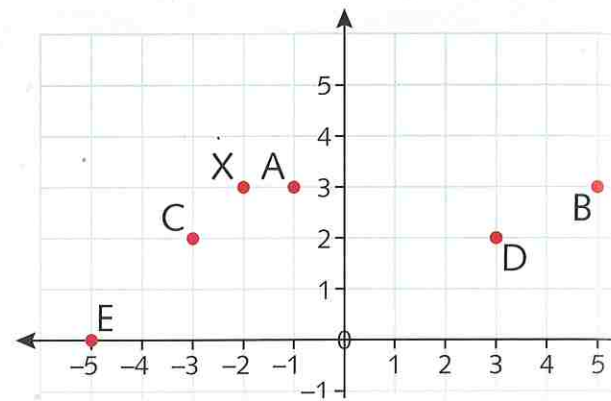


Use coordinates to describe positions in two and in four quadrants and predict missing coordinates

Challenge 1

1 The points on the grid represent five footballers on a football pitch. Write the coordinates of players A to E.

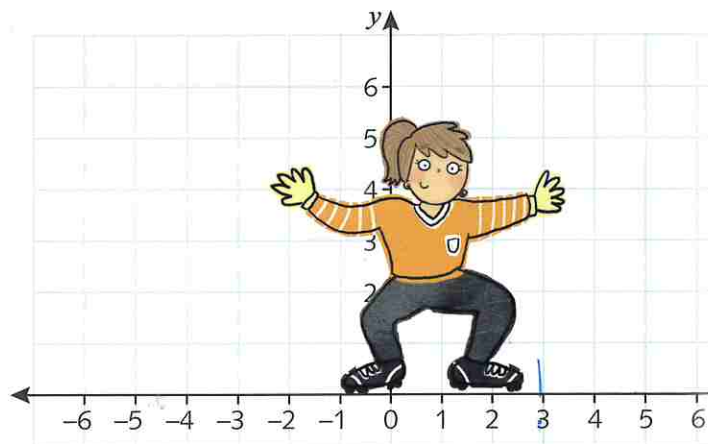
2 The ball is at the point X (-2, 3). Decide where to position the referee and write the coordinates as R (,). Explain your choice.



Challenge 2

1 The Cup Final has gone to a penalty shoot-out.

- The shot is a miss if the goalkeeper covers the coordinates.
- The shot is a goal if the coordinates are not covered by the goalkeeper.



a Copy and complete the score sheet for each team.

Rustean Rovers					
Coordinates of shot	(-2, 4)	(-5, 6)	(3, 4)	(-4, 1)	(2, 2)
Result	miss				
Ashwell United					
Coordinates of shot	(3, 5)	(-6, 1)	(-1, 2)	(3, 4)	(-3, 3)
Result					

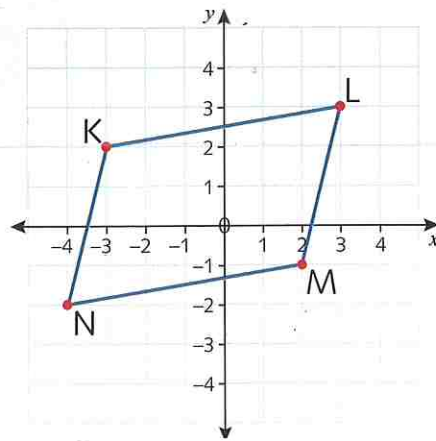
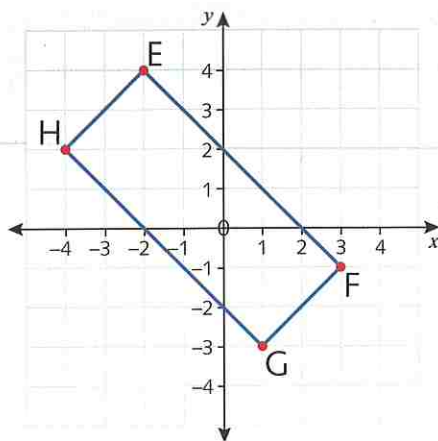
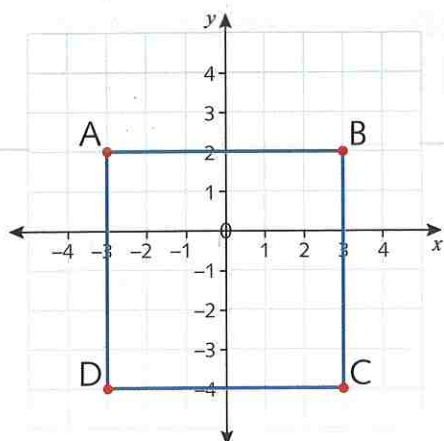
b Which team won the Cup?

2 List the coordinates of the vertices of each shape.

a square ABCD

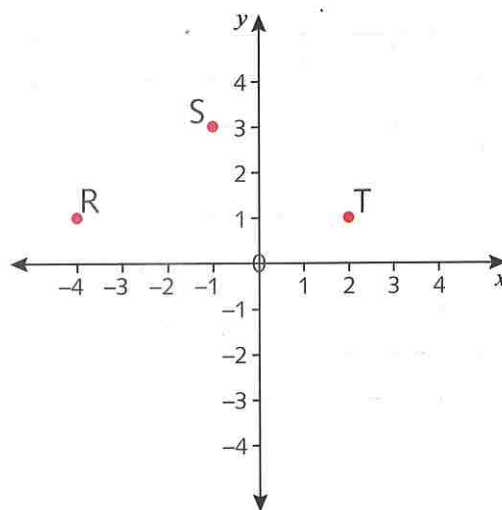
b rectangle EFGH

c parallelogram KLMN



3 The points R, S and T form three of the vertices of a rhombus.

What are the coordinates of the fourth vertex U?



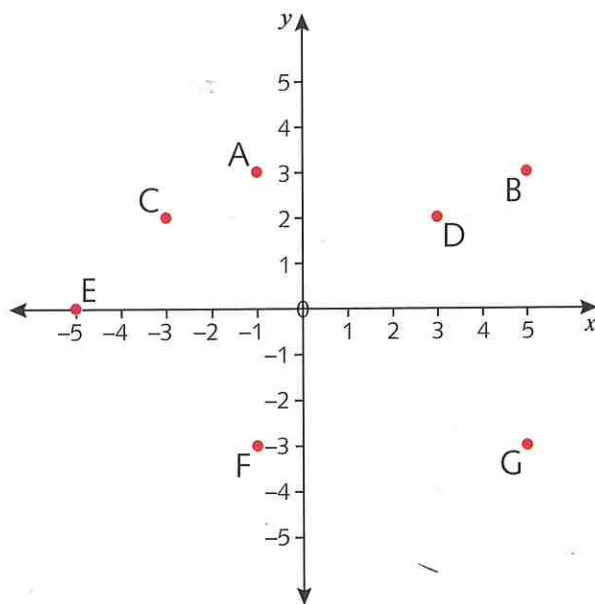
1 List the coordinates of the four points that are the vertices of:

a a square

b two parallelograms

c an isosceles triangle with all angles less than 90° .

2 The points D (3, 2) and F (-1, -3) are two vertices of a scalene triangle. Find two different coordinates for the third vertex.



Plotting shapes in the four quadrants (I)

Plot, draw and label shapes in the four quadrants and predict missing coordinates

Challenge 1

Use Resource 12: 4-quadrant coordinate grids.

1 Plot these points on one of the grids.

A (4, 4)

B (-3, 3)

C (2, 3)

D (-5, 2)

E (-4, 0)

F (-3, -2)

G (2, -2)

H (0, -3)

2 Write the letter of the point or points that are:

a in the 2nd quadrant

b in the 3rd quadrant

c in the 4th quadrant

d on the x-axis

e on the y-axis

3 Using a ruler, join the points B, C, G and F in order to form a square.

Challenge 2

For each diagram, use a different grid on Resource 12: 4-quadrant coordinate grid

1 On four separate grids, plot each point and join the points in order:

a rectangle ABCD:

A (-2, 3), B (3, 3),

C (3, -4), D (-2, -4)

b square EFGH:

E (1, 3), F (5, -1),

G (1, -5), H (-3, -1)

c parallelogram IJKL:

I (-3, 2), J (5, 2),

K (3, -3), L (-5, -3)

d rhombus PQRS:

P (0, 0), Q (4, -2),

R (0, -4), S (-4, -2)

2 The points T (-3, 3), U (3, 2) and V (2, -4) are three vertices of a square.

- Plot the points and join them in order, T to U and U to V.
- Find the coordinates of the missing vertex W.
- Complete the drawing of the square.

You will need:

- copies of Resource 12 4-quadrant coordinate grids
- ruler

3 The points A $(-5, -1)$, B $(1, 5)$ and C $(5, 1)$ are three vertices of a rectangle.

- Plot the points and join them in order, A to B and B to C.
- Find the coordinates of the missing vertex D.
- Complete the drawing of the rectangle.

4 The points E $(3, 4)$, F $(3, -3)$ and G $(-3, -5)$ are three vertices of a parallelogram.

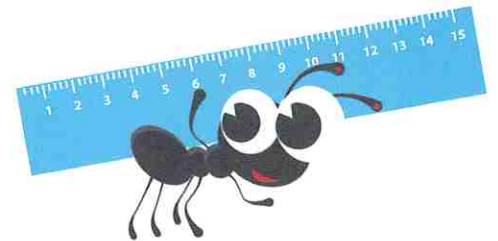
- Plot the points and join them in order, E to F and F to G.
- Find the coordinates of the missing vertex H.
- Complete the drawing of the parallelogram.

5 The points J $(-1, 3)$, K $(1, 0)$ and L $(-1, -3)$ are three vertices of a rhombus.

- Plot the points and join them in order, J to K and K to L.
- Find the coordinates of the missing vertex M.
- Complete the drawing of the rhombus.



For each diagram, use a different grid on Resource 12: 4-quadrant coordinate grids.



1 AB is one side of a square ABCD, with A $(0, -1)$ and B $(4, -1)$.

- Plot the points A and B.
- Find two sets of coordinates for the missing vertices C and D.
- Complete the drawings of the squares.

2 FH is a diagonal of a square EFGH, with F $(2, 3)$ and H $(-4, -3)$.

- Plot the points F and H.
- Find the coordinates for the missing vertices E and G.
- Complete the drawing of the square.

