Plotting shapes in the four quadrants (2)

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

1 Plot these points onto a grid on Resource 12:
4-quadrant coordinate grids.

You will need:
- copies of Resource 12: 4-quadrant coordinate grids
- ruler

A (−3, 4)   B (−1, 1)   C (3, 3)   D (4, 0)

E (−4, −1)   F (−2, −4)   G (0, −2)   H (3, −5)

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, D, H and F in order to form a square.

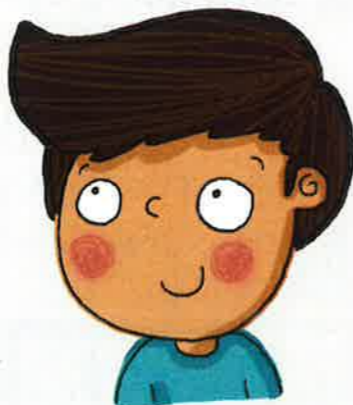For each diagram, use a different grid on Resource 12: 4-quadrant coordinate grids.

1 Plot each point and join the points in order:

a rectangle ABCD:
A (−4, 2), B (3, 2),
C (3, −2), D (−4, −2)

b square EFGH:
E (−1, 2), F (2, −1),
G (−1, −4), H (−4, −1)

c parallelogram JKLM:
J (−2, 3), K (3, 1),
L (3, −4), M (−2, −2)

d rhombus PQRS:
P (−1, 4), Q (1, 1),
R (−1, −2), S (−3, 1)

2 The points A (−3, 1), B (3, 2) and C (4, −4) are three vertices of a square.
- 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 square.

3 The points E (−4, −1), F (−1, 4) and G (4, −1) are three vertices of a rectangle.
- 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 rectangle.

4 The points J (−4, 1), K (3, 2) and L (5, −2) are three vertices of a parallelogram.
- 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 parallelogram.

5 The points P (−1, 3), Q (1, 0) and R (−1, −3) are three vertices of a rhombus.
- Plot the points and join them in order, P to Q and Q to R.
- Find the coordinates of the missing vertex S.
- Complete the drawing of the rhombus.
- Find the coordinates for the intersection of the diagonals.

Challenge 3

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

1 The line joining the points A (−4, 3) and C (2, −3) is a diagonal of square ABCD.
- Plot the points A and C.
- Predict the missing coordinates for the vertices B and D.
- Complete the drawing of the square.

2 The line joining the points E (−3, 1) and F (3, 3) is a side of square EFGH.
- Plot the points E and F.
- Predict the missing coordinates for the vertices G and H if both points have negative y–coordinates.
- Complete the drawing of the square.
- Write the coordinates of the intersection of the diagonals at the point J.