Planner

# Shape

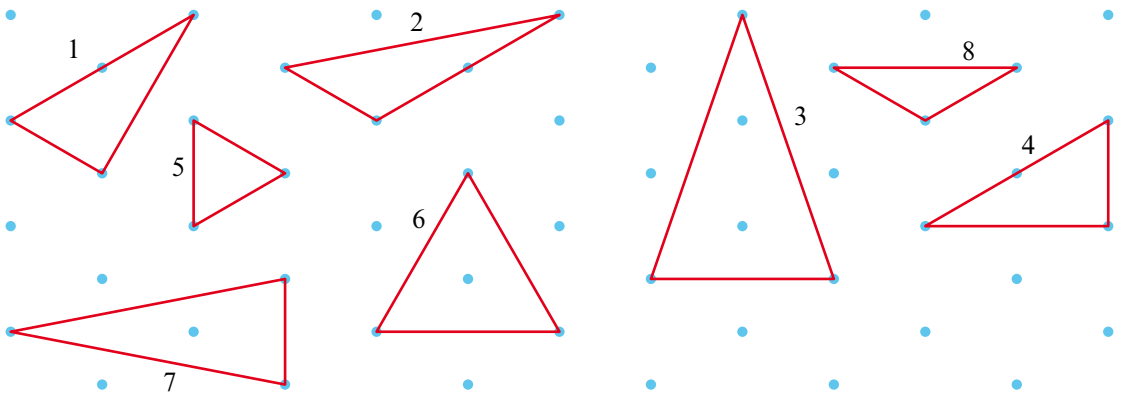
- Describing different types of triangles using their properties
- Recognising line symmetry and reflecting in a mirror line
- Recognising parallel lines and the different types of quadrilateral
- Plotting coordinates in four quadrants

Keywords

You should know

explanation 1

**1** The triangles in the diagram are drawn on isometric dotty paper.



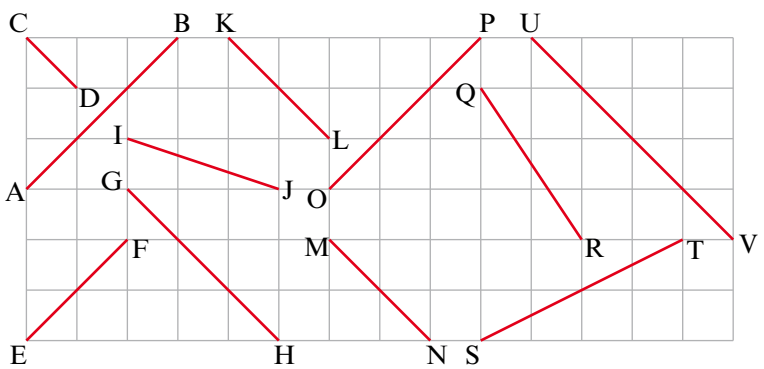

List the triangles that are

**a** Equilateral **b** Isosceles **c** Scalene

explanation 2a explanation 2b

**2** List all of the lines in the diagram that are

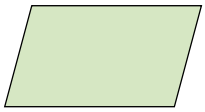
**a** parallel to AB **b** parallel to CD **c** perpendicular to CD

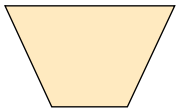


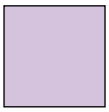
explanation 3a explanation 3b

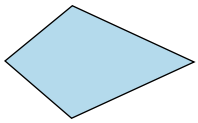
**3** **a** Match the names to the shapes.

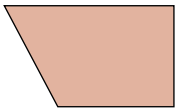
i 

ii 

iii 

iv 

v 

vi 

Trapezium

Kite

Square

Isosceles trapezium

Parallelogram

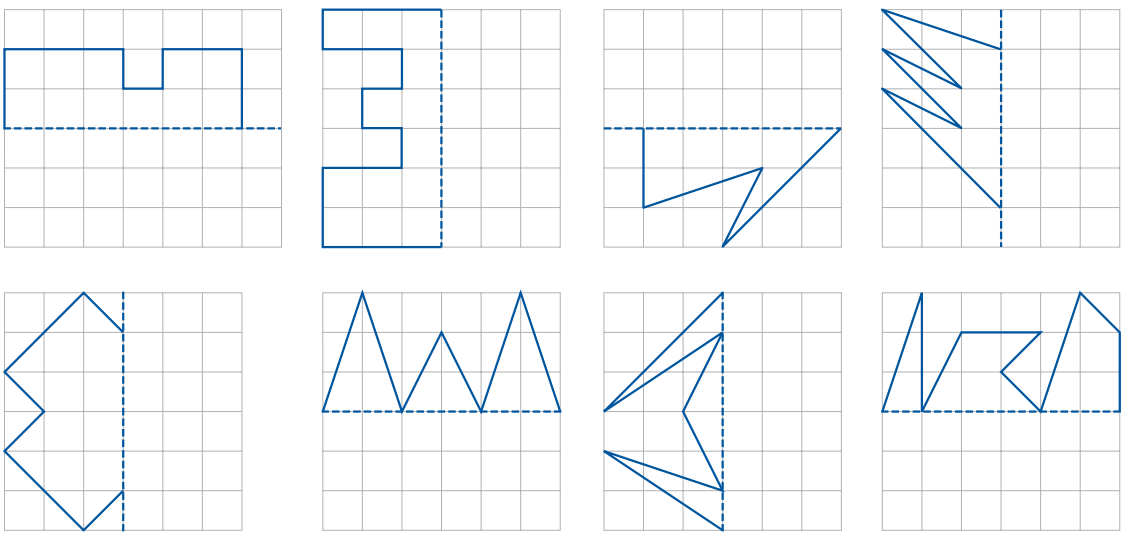
Rectangle

Rhombus

**b** Draw the shape to match the label that is left over.

explanation 4 online

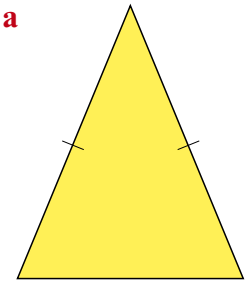
**4** Copy and complete each diagram so that the dotted line is a line of symmetry.



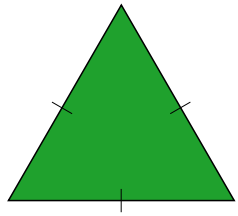
**5** Copy these diagrams and draw on any lines of symmetry.

Write down the name of each triangle below the diagram.

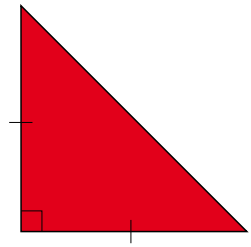
**a**



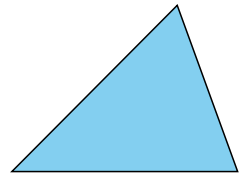
**b**



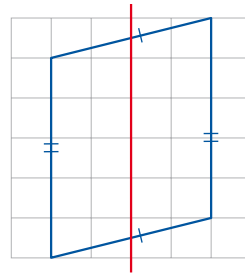
**c**



**d**



**6** David has drawn a line of symmetry on this parallelogram.

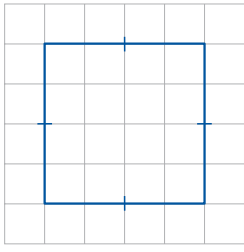


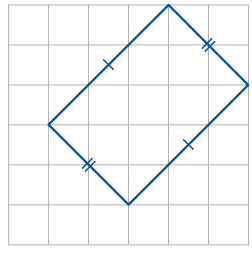
**a** Show that David is incorrect.

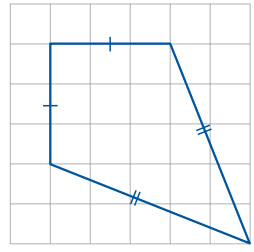
**b** How many lines of symmetry does a parallelogram have?

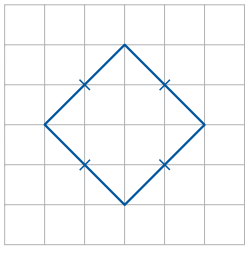
**7** Copy these diagrams and draw any lines of symmetry.

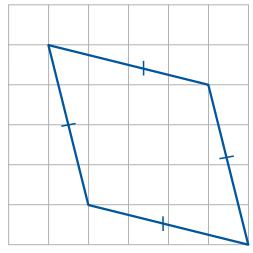
Write down the name of each shape.

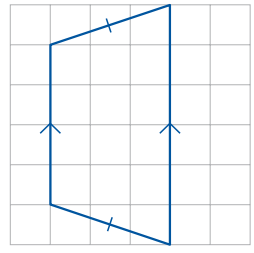






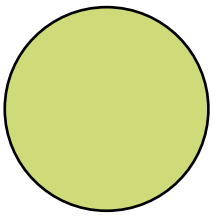




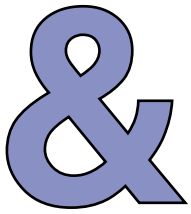


**8** Which of these shapes have at least one line of symmetry?

**a**

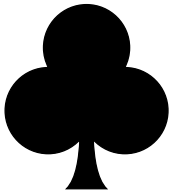


**b**



**c**

**d**



**e**

**f**

explanation 5

**9** **a** Which labelled point has these coordinates?

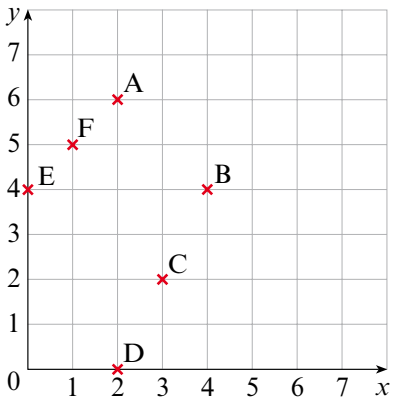
**i** (2, 0) **ii** (4, 4) **iii** (1, 5)

**b** Write down the coordinates of the other labelled points.

**c** What shape would you make if you joined the points in order and then returned to A?

**d** How many lines of symmetry does this shape have?

**e** Which of the labelled points would the lines of symmetry go through?



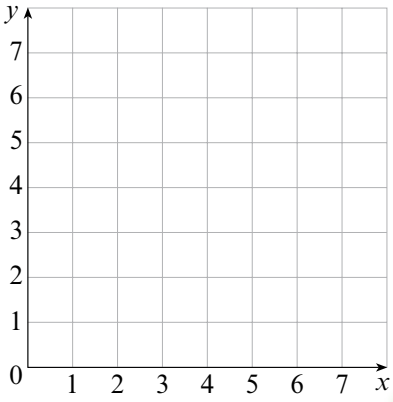

**10** **a** Copy the grid.

Plot points A, B and C then join them in order with straight lines.

A (4, 1), B (6, 5), C (4, 7)

**b** Find the coordinates of D so that ABCD is a kite.

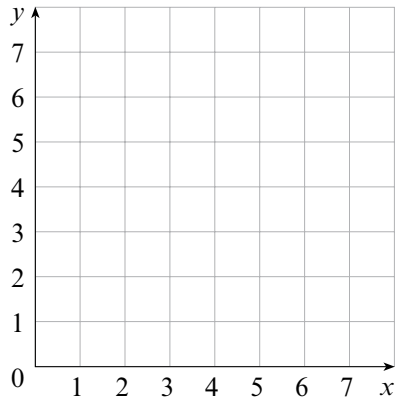
**c** Find the coordinates of E so that ABCE is a parallelogram.



**11** **a** Copy the grid.

Plot points P, Q and R then join them in order with straight lines.

P (1, 5), Q (4, 7), R (7, 5)



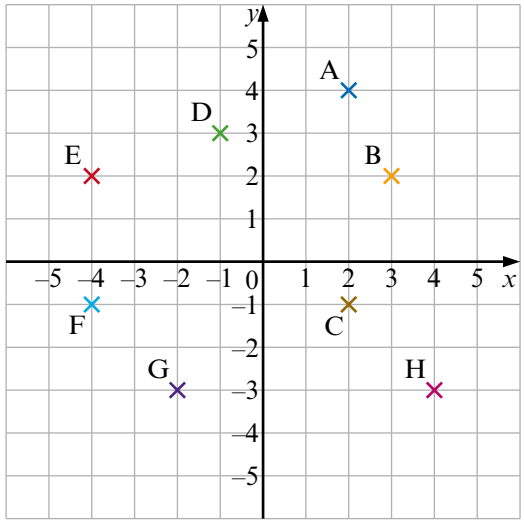

**b** If X has coordinate (7, 1) what shape is PQRX?

**c** Find the coordinates of S so that PQRS is a rhombus.

**d** Find the coordinates of T so that PQRT is a kite.

explanation 6 online

***12** Write down the coordinates of each labelled point.




***13** **a** Draw $x$- and $y$-axes labelled from −5 to 5 like those in question **12**.

Plot the following points and join them in order with straight lines.

(3, 2) (−5, 2) (2, −4) (−1, 5) (−4, −4) (3, 2)

**b** What shape have you made?

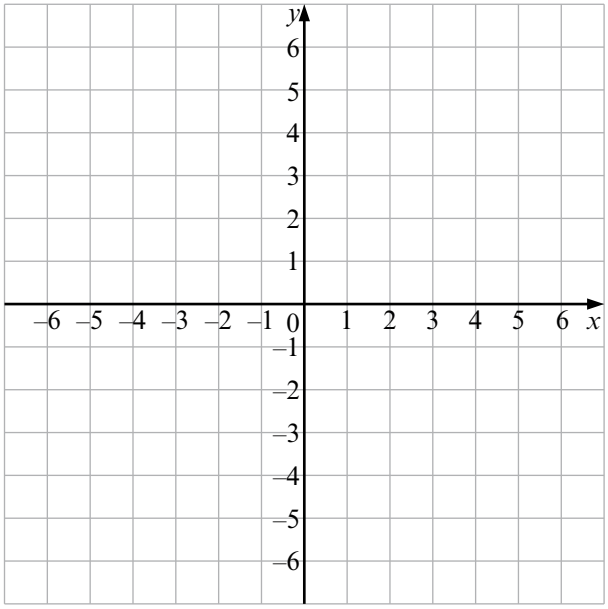
**c** How many lines of symmetry does the shape have?

**d** How many triangles does this shape contain?

***14** **a** Copy the $x$- and $y$-axes.

Plot the following points and join them in order with straight lines.

(−4, −5) (4, 3) (−4, 3) (0, 6) (4, 3) (4, −5) (−4, −5) (−4, 3) (4, −5)




**b** How many lines of symmetry does the shape have?

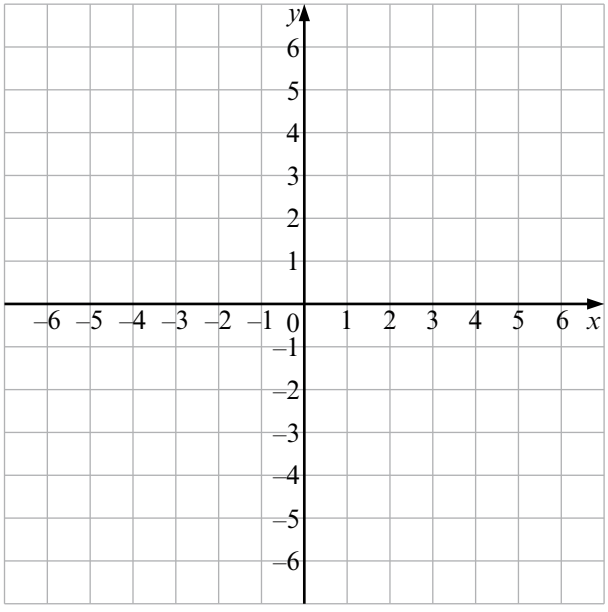
**c** How many pairs of parallel sides are there?

**d** How many triangles does the shape contain?

**e** What are the coordinates of the point where the diagonals of the square cross?

***15** **a** Copy the $x$- and $y$-axes.

Plot the points (2, 2) (−2, −2) and (−2, 2).




**b** What are the coordinates of a fourth point that would make a square?

**c** What are the coordinates of a fourth point that would make a parallelogram?

**d** What are the coordinates of a fourth point that would make a kite?