



- 1 How many lines of symmetry does a square have?

(1 mark)

2 through the middle of opposite sides

2 diagonals

4

- 2 Write down the number of lines of symmetry of each letter.

- a. H
b. A
c. S

(3 marks)

a)

2

b)

1

c)

0

- 3 a. Write down the number of lines of symmetry of a square.

- b. Write down the number of lines of symmetry of a rectangle that is not a square.

(2 marks)

A line of symmetry is a fold line that makes the two halves match exactly.

Turning a shape does not change how many such lines it has

A square has 4 lines of symmetry: one horizontal, one vertical and two diagonal

A rectangle that is not a square has only 2 lines of symmetry: one horizontal and one vertical. Its diagonals are not lines of symmetry

4 Write down the number of lines of symmetry of

- a. a regular pentagon
- b. a rectangle that is not a square

(2 marks)

a)

5 sides

5

b)

2

5 a. Write down the order of rotational symmetry of a regular hexagon.

b. Write down the number of lines of symmetry of a regular hexagon.

(2 marks)

A regular hexagon fits onto itself 6 times during a full turn, so its order of rotational symmetry is 6

A regular polygon has the same number of lines of symmetry as sides, so a regular hexagon has 6 lines of symmetry

6 The diagram shows a rectangle that is not a square.

Draw all the lines of symmetry on the rectangle.



(2 marks)

Join midpoints of opposite sides

Vertical line through the middle

Horizontal line through the middle

2 lines of symmetry

7 Chen says, "A rectangle has 4 lines of symmetry."

Is Chen correct? Give a reason.

(2 marks)

lines through the middles of opposite sides = 2
diagonals do not work

No - it has 2

8 Write down the name of a quadrilateral that has

a. exactly one line of symmetry

b. no lines of symmetry

(2 marks)

a)

kite

b)

parallelogram

9 The grid has 2 rows and 4 columns. A dotted vertical line of symmetry runs between column 2 and column 3. Squares shaded so far are shown in the table (S = shaded, blank = not shaded).

	Col 1	Col 2	Col 3	Col 4
Row 1	S	S		
Row 2	S			

Which squares must also be shaded so the pattern is symmetrical about the dotted line? Give each as (row, column).

(2 marks)

col 1 and col 4 match, col 2 and col 3 match

(1, 2) goes to (1, 3)

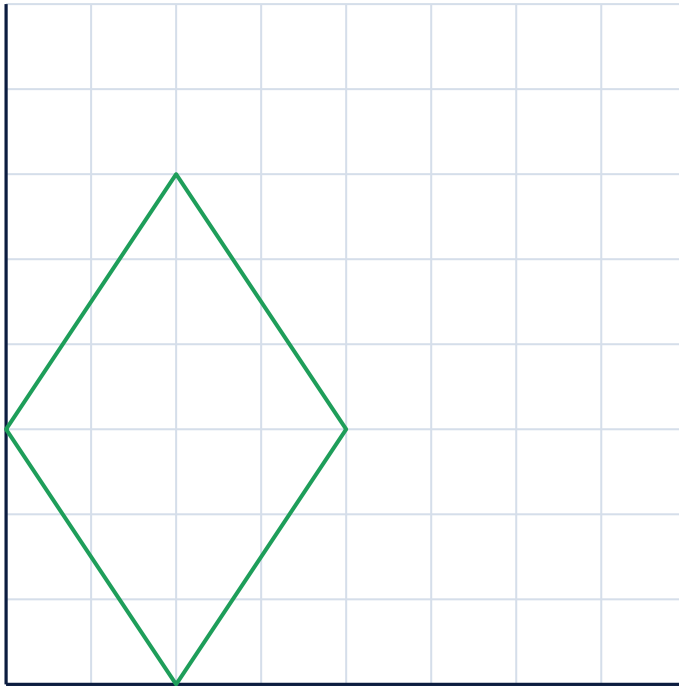
(1, 1) goes to (1, 4)

(2, 1) goes to (2, 4)

(1, 3), (1, 4), (2, 4)

10

On the centimetre grid, draw a quadrilateral that has exactly two lines of symmetry and no right angles.



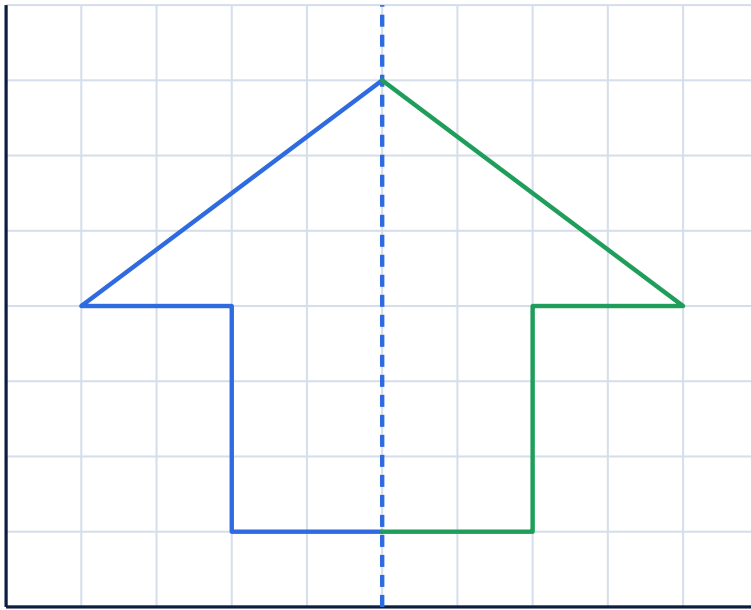
(2 marks)

A quadrilateral with exactly two lines of symmetry and no right angles must be a rhombus that is not a square

Draw a rhombus on the grid, for example with vertices at $(2,0)$, $(4,3)$, $(2,6)$ and $(0,3)$. Its diagonals are its two lines of symmetry

11

The diagram shows part of a shape drawn on a centimetre grid, together with a dashed vertical line. Complete the shape so that the dashed line is a line of symmetry of the completed shape.



(2 marks)

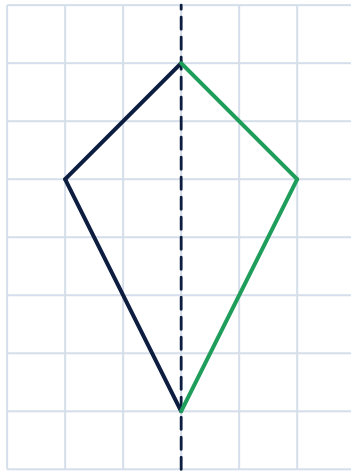
Reflect every vertex of the given half in the dashed line, keeping each point the same distance from the line on the opposite side

Join the reflected vertices to complete the shape so that the two halves match exactly

12

Here is the left half of a shape. The dotted line is a line of symmetry.

- Complete the shape so that the dotted line is a line of symmetry.
- Write down the mathematical name of the shape you have drawn.



(3 marks)

a)

Left vertex is 2 squares from the mirror line

Mark a point 2 squares the other side, same height

Join it to the top and bottom points

b)

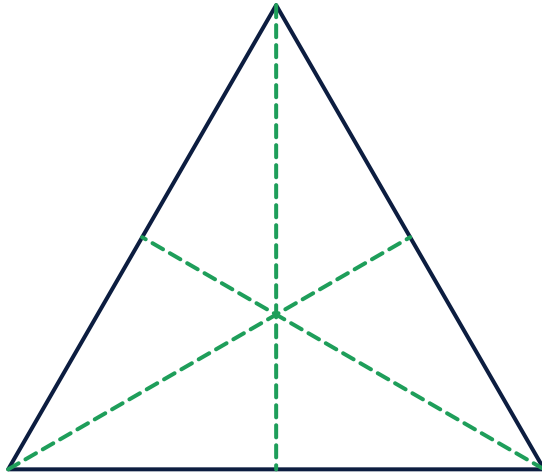
2 pairs of equal sides next to each other

kite

13

The diagram shows an equilateral triangle.

- Draw all the lines of symmetry on the triangle.
- How many lines of symmetry does it have?



(3 marks)

a)

Join each corner to the midpoint of the opposite side

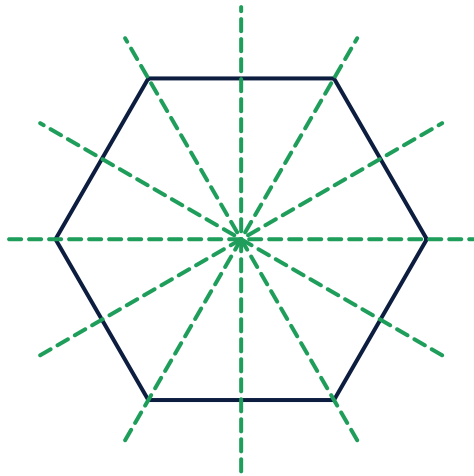
b)

3

14

The diagram shows a regular hexagon.

- Draw all the lines of symmetry on the hexagon.
- Write down the number of lines of symmetry of a regular hexagon.



(3 marks)

a)

3 lines join opposite corners

3 lines join midpoints of opposite sides

b)

$$3 + 3 = 6$$

6