



Lines of symmetry in 2D shapes

A line of symmetry is a fold line: fold the shape along it and the two halves match exactly. Some shapes have none, some have several, and turning a shape round never changes how many it has.

How many lines of symmetry?

Square	Rectangle	Equilateral	Isosceles	Parallelogram	Circle
• 4 lines	• 2 lines (a square is a special rectangle with 4)	• 3 lines	• 1 line (an equilateral triangle has 3)	• 0 lines (no right angles, unequal adjacent sides)	• infinitely many lines

Worked example

Does a rectangle have a line of symmetry along its diagonal?

Imagine folding the rectangle corner to corner. The two triangles you get are the same size, but they do not lie on top of each other: one sticks out each side.

So the diagonal is not a line of symmetry. A rectangle's two lines of symmetry run through the middles of its sides. Only a square also has diagonal ones.

The common mistake

"A rectangle has four lines of symmetry, like a square."

A rectangle that is not a square has only two. The diagonals look like they might work, but fold along one and the halves do not match. A square is a special rectangle: all four sides are equal, so the diagonal folds match too and it has four.

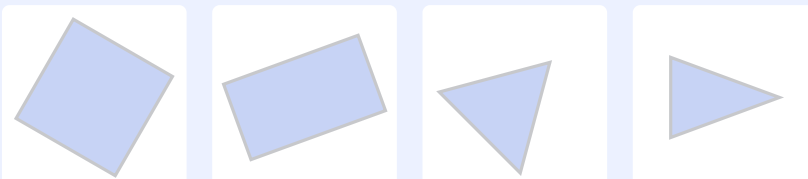
Test yourself

- ☐ 1 How many lines of symmetry does a square have?
- ☐ 2 How many does this block capital A have?
- ☐ 3 How many does a parallelogram have?

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Draw every line of symmetry

The shapes are turned round on purpose: turning a shape never changes how many lines it has.



Next topic

Completing a symmetric figure

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Answers: 1. Four, 2. One, straight down the middle, 3. None, if it has no right angles and unequal adjacent sides.