

Lines of Symmetry

A line of symmetry is a fold line that makes both halves of a shape match perfectly. Some shapes have one, some have many, and some have none.

Shape	Lines of symmetry
Square	4
Rectangle (not square)	2
Equilateral triangle	3
Isosceles triangle	1
Circle	infinitely many
Scalene triangle	0

Key Concepts

1. A **line of symmetry** is an imaginary fold line that splits a shape into two matching halves.
2. A shape has *as many* lines of symmetry as the number of ways you can fold it so both halves match.
3. A **regular** polygon has the same number of lines of symmetry as it has sides. Squares: 4, equilateral triangles: 3, regular hexagons: 6, etc.
4. **Circles** have infinite lines of symmetry — every line through the center works.


Worked Examples

① How many lines of symmetry does a square have?

 Try folding a square: vertical, horizontal, and the two diagonals all create matching halves. Total: 4.

 **Answer:** 4

② Does the letter B have a horizontal line of symmetry?

 Fold B horizontally (top half onto bottom half). The two bumps on the right side match up, and the vertical line on the left matches itself. So yes, B has a horizontal line of symmetry.

 **Answer:** Yes

③ How many lines of symmetry does an equilateral triangle have?

 An equilateral triangle has 3 equal sides. Each fold line goes from a vertex to the middle of the opposite side, giving 3 lines of symmetry total.

 **Answer:** 3

Practice Problems

Find the number of lines of symmetry.

- | | | | |
|---|-------|--|-------|
| 1. Square \Rightarrow ___ lines | _____ | 7. Letter A \Rightarrow ___ line(s) | _____ |
| 2. Rectangle (not square) \Rightarrow ___ lines | _____ | 8. Letter S \Rightarrow ___ line(s) | _____ |
| 3. Equilateral triangle \Rightarrow ___ lines | _____ | 9. Heart shape \Rightarrow ___ line(s) | _____ |
| 4. Circle \Rightarrow ___ lines | _____ | 10. Regular pentagon \Rightarrow ___ lines | _____ |
| 5. Regular hexagon \Rightarrow ___ lines | _____ | 11. Scalene triangle \Rightarrow ___ lines | _____ |
| 6. Isosceles triangle \Rightarrow ___ line(s) | _____ | 12. Regular octagon \Rightarrow ___ lines | _____ |

Study Tips

-  Picture folding the shape in half. If the two halves overlap exactly, the fold line is a line of symmetry.
-  Regular polygons (all sides and angles equal) have one line of symmetry per side.
-  Letters like A, M, T, U have one vertical line of symmetry. Letters like B, C, D, E have one horizontal line.

Word Problems

1. Kai draws a regular hexagon for art class. How many lines of symmetry does it have?

Answer: _____

2. Emily folds a heart-shaped card in half. Both sides match. How many lines of symmetry does a heart have?

Answer: _____

Answer Key — with Friendly Explanations**Practice Problems**

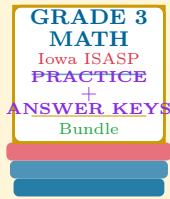
1. Vertical, horizontal, 2 diagonals.  **Answer:** 4
2. Vertical and horizontal only.  **Answer:** 2
3. One line from each vertex to opposite side.  **Answer:** 3
4. Any line through the center works.  **Answer:** *Infinitely many*
5. One line per side.  **Answer:** 6
6. One line from the apex to the base midpoint.  **Answer:** 1
7. Vertical line down the middle.  **Answer:** 1
8. S has no line of symmetry (only rotational).  **Answer:** 0
9. Vertical line through the middle.  **Answer:** 1
10. Regular pentagon: 5 lines.  **Answer:** 5
11. All sides different = no line of symmetry.  **Answer:** 0
12. Regular octagon: 8 lines.  **Answer:** 8

Word Problems

1. Regular hexagon: 6 lines.  **Answer:** 6
2. Heart: one vertical line.  **Answer:** 1

Want a Complete Grade 3 Math Program?

Check Out Our Iowa ISASP Grade 3 Math Bundle!



Iowa ISASP Grade 3 Math Bundle

Practice tests, complete answer keys, and step-by-step explanations
Everything a third grader needs to feel ready!

Tests +
Answer Keys
One Bundle

Find it online:

<https://www.effortlessmath.com/product/iowa-isasp-grade-3-math-made-ridiculously-simple/>

Important: This bundle combines the practice and the explanations into one easy-to-print package designed for Grade 3 students. **Made for parents, teachers, and tutors who want everything in one place.**

Full Practice Tests

- ✓ Complete ISASP-style practice tests
- ✓ Mirrors the real exam format and difficulty
- ✓ Builds test-taking confidence
- ✓ Aligned with state Grade 3 math standards

Start with a full-length practice test!

Step-by-Step Answer Keys

- ✓ Every question worked out, not just an answer
- ✓ Friendly, third-grade-ready explanations
- ✓ Catches and explains common misconceptions
- ✓ Parents can help even without a math background

Learn from every mistake!

Single-Skill Worksheets

- ✓ Targets one Grade 3 math skill per page
- ✓ Covers place value, multiplication, fractions, measurement, geometry
- ✓ Includes a Quick Review + Practice + Word Problems
- ✓ Built-in friendly Answer Key for self-checking

Master one skill at a time!