Aksum Math

Name: _____

Lines of Symmetry

Date: _____

Geometry · Grade 4

Score: _____ / 10

★ Hard · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. How many lines of symmetry does a regular 12-sided polygon have?

Answer: _____

2. An isosceles triangle has two equal sides.

Does it have a line of symmetry? If so, where?

Answer: _____

3. Design a capital letter using only straight lines that has EXACTLY 2 lines of symmetry.

Answer: _____

4. How many lines of symmetry does a non-square rectangle have? Describe them.

Answer: _____

5. A regular 20-sided polygon has how many lines of symmetry?

Answer: _____

6. Does a kite (with two pairs of consecutive equal sides) have line symmetry?

Answer: _____

7. Which letter has 4 lines of symmetry: H, X, O, or A?

Answer: _____

8. A shape has 0 lines of symmetry. Name one example.

Answer: _____

9. An equilateral triangle has how many lines of symmetry, and what is the angle between consecutive lines?

Answer: _____

10. Does a regular pentagon have a horizontal line of symmetry when one vertex points up?

Answer: _____

Answer Key Lines of Symmetry — Hard

1. **12**

A regular n-gon has n lines of symmetry. 12-sided polygon → 12 lines.

2. **Yes — one line of symmetry through the apex, perpendicular to the base.**

An isosceles triangle has 1 line of symmetry: the perpendicular bisector of its base (passing through the apex).

3. **H, I, or X (many valid answers).**

H has vertical and horizontal symmetry. I has vertical and horizontal symmetry. X has 4 (more than 2). So H or I.

4. **2 lines of symmetry — one horizontal (through the middle), one vertical (through the middle).**

A non-square rectangle has exactly 2 lines of symmetry: vertical down the middle and horizontal across the middle. (Diagonals are NOT lines of symmetry.)

5. **20**

Regular n-gon → n lines.

6. **Yes — 1 line of symmetry along the axis of the two pairs.**

A kite has exactly 1 line of symmetry, running through the vertices between the unequal sides.

7. **X (if formed with equal crossing lines).**

X has vertical, horizontal, and two diagonal lines of symmetry.

8. **A scalene triangle (or a general parallelogram).**

Scalene triangles or general parallelograms have no line symmetry.

9. **3 lines, 60° between consecutive lines.**

180° ÷ 3 = 60° between consecutive lines.

10. **No**

With a vertex pointing up, the pentagon has a vertical line of symmetry but not a horizontal one.
