

Lines of Symmetry in Shapes and Letters

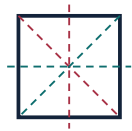
Unit: Geometry - Student Practice Worksheet

Overview: Anaya folded a paper butterfly in half and both wings landed exactly on top of each other. Kabir folded the letter F the same way, and nothing matched at all. One fold worked because of a fact the shape itself was hiding: symmetry.

Practice Questions (30 Total)

Section A - Easy

Q1. Dashed folds on a square. How many work?



square folds

- ☐ A. 1
- ☐ B. 4
- ☐ C. 2
- ☐ D. 0

Q2. What is a line of symmetry?

- ☐ A. A fold line where both halves match exactly
- ☐ B. Any straight line drawn on a shape
- ☐ C. The longest side of a shape
- ☐ D. A line that touches the shape's corner

Q3. The letter F has how many lines of symmetry?

- ☐ A. 1
- ☐ B. 2
- ☐ C. 4
- ☐ D. 0

Q4. Capital A with a vertical dashed line. How many folds?



one vertical fold

- ☐ A. 1
- ☐ B. 0
- ☐ C. 2
- ☐ D. 4

Q5. How do you test whether a shape has a line of symmetry?

- ☐ A. Count its corners
- ☐ B. Measure its area
- ☐ C. Fold it and check if both halves match
- ☐ D. Check its colour

Q6. A non-square rectangle has how many lines of symmetry?

- ☐ A. 0
- ☐ B. 2
- ☐ C. 1
- ☐ D. 4

Q7. Heart with one dashed fold. How many lines?



heart fold

- ☐ A. 0
- ☐ B. 2
- ☐ C. 3
- ☐ D. 1

Q8. Can a shape have zero lines of symmetry?

- ☐ A. Yes, like the letter F
- ☐ B. No, every shape has at least one
- ☐ C. Only curved shapes can
- ☐ D. Only if it has no corners

Q9. How many lines of symmetry does a circle have?

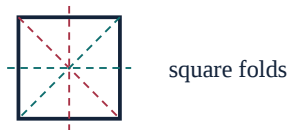
- ☐ A. 0
- ☐ B. 1
- ☐ C. Infinitely many
- ☐ D. 4

Q10. Which diagonal fold works on a square?

- ☐ A. Neither diagonal
- ☐ B. Both diagonals
- ☐ C. Only one diagonal
- ☐ D. Only the vertical, not diagonals

Section B - Medium

Q11. Four dashed folds on a square. Likely shape for 4 lines?



- ☐ A. A square
- ☐ B. A scalene triangle
- ☐ C. A non-square rectangle
- ☐ D. The letter F

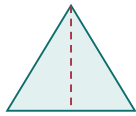
Q12. Kabir folded the letter F every way he could. What did he find?

- ☐ A. No fold worked at all
- ☐ B. One fold worked
- ☐ C. Every fold worked
- ☐ D. Only the diagonal worked

Q13. Which of these letters has exactly one line of symmetry (a vertical one)?

- ☐ A. F
- ☐ B. N
- ☐ C. T
- ☐ D. R

Q14. Equilateral triangle with a fold. How many such folds?



equal sides

- ☐ A. 0
- ☐ B. 3
- ☐ C. 1
- ☐ D. 2

Q15. Why does a non-square rectangle's diagonal fold NOT work as a line of symmetry?

- ☐ A. Because rectangles have no corners
- ☐ B. Because the unequal side lengths mean the two triangle halves don't match
- ☐ C. Because diagonals are always too long
- ☐ D. Because rectangles cannot be folded at all

Q16. Which of these letters has exactly one line of symmetry (a horizontal one)?

- ☐ A. S
- ☐ B. Z
- ☐ C. N
- ☐ D. B

Q17. Capital H with two dashed folds. How many lines?



H folds

- ☐ A. 2
- ☐ B. 0
- ☐ C. 1
- ☐ D. 4

Q18. Anaya says a shape's line of symmetry can be diagonal, not just vertical or horizontal. Is she right?

- ☐ A. No, symmetry lines must be vertical or horizontal only
- ☐ B. Only circles can have diagonal symmetry

- ☐ C. Yes — a square's diagonals are genuine lines of symmetry too
- ☐ D. Diagonal lines never count as symmetry

Q19. Which of these does NOT have a line of symmetry?

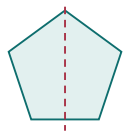
- ☐ A. The letter A
- ☐ B. The letter R
- ☐ C. A square
- ☐ D. A circle

Q20. Which shape has the MOST lines of symmetry?

- ☐ A. A square
- ☐ B. An equilateral triangle
- ☐ C. A non-square rectangle
- ☐ D. A circle

Section C - Challenge

Q21. Regular pentagon with a dashed fold. How many such lines?



regular pentagon

- ☐ A. 5
- ☐ B. 1
- ☐ C. 10
- ☐ D. 0

Q22. Kabir claims: 'Any shape with equal sides automatically has a line of symmetry.' Is this always true?

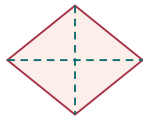
- ☐ A. Yes, that always holds
- ☐ B. Only for shapes with 4 sides
- ☐ C. No — equal sides alone don't guarantee a matching fold
- ☐ D. Only for curved shapes

Q23. A regular hexagon (6 equal sides) has how many lines of symmetry?

- ☐ A. 3

- ☐ B. 6
- ☐ C. 12
- ☐ D. 1

Q24. Rhombus that is not a square. How many folds match?



rhombus, not square

- ☐ A. 0
- ☐ B. 4
- ☐ C. 1
- ☐ D. 2

Q25. A shape is symmetric across a vertical line but NOT across a horizontal line. What can you conclude?

- ☐ A. It must be a circle
- ☐ B. It has one confirmed line, others still need checking
- ☐ C. It has zero lines of symmetry
- ☐ D. It must be a square

Q26. An isosceles triangle (exactly two equal sides) has how many lines of symmetry?

- ☐ A. 0
- ☐ B. 3
- ☐ C. 2
- ☐ D. 1

Q27. Capital X with vertical and horizontal dashes. Letter?



both ways

- ☐ A. X
- ☐ B. T
- ☐ C. B
- ☐ D. A

Q28. Why does a circle have infinitely many lines of symmetry, while a square has only 4?

- ☐ **A.** Because a circle has no fixed corners, so every line through its centre is a valid fold
- ☐ **B.** Because circles are bigger than squares
- ☐ **C.** Because squares have curved edges
- ☐ **D.** There is no real reason — it is simply a rule to memorise

Q29. Anaya says a scalene triangle (all sides different lengths) has a line of symmetry. Is she right?

- ☐ **A.** Yes, every triangle has one
- ☐ **B.** Only if it is also a right triangle
- ☐ **C.** No — with all sides different, no fold can make the two halves match
- ☐ **D.** Only if it is very small

Q30. Ms. Rao's class sorted shapes into 'zero', 'one', and 'more than one' lines of symmetry. Which category does a regular octagon (8 equal sides) belong to?

- ☐ **A.** Zero
- ☐ **B.** More than one, specifically 8
- ☐ **C.** Exactly one
- ☐ **D.** More than one, but exactly 4

Answer Key

- Q1:** (B) (b) 4 — vertical, horizontal, and both diagonals.
- Q2:** (A) (a) A fold line where both halves match exactly.
- Q3:** (D) (d) 0 — no fold makes the letter F match itself.
- Q4:** (A) (a) 1 — a single vertical fold makes both sides match.
- Q5:** (C) (c) Fold it and check if both halves match exactly.
- Q6:** (B) (b) 2 — vertical and horizontal only, not the diagonals.
- Q7:** (D) (d) 1 — a single vertical fold down the centre.
- Q8:** (A) (a) Yes — some shapes genuinely have no line of symmetry, like the letter F.
- Q9:** (C) (c) Infinitely many — every line through its centre works.
- Q10:** (B) (b) Both diagonals work, along with vertical and horizontal.
- Q11:** (A) (a) A square — it has exactly 4: vertical, horizontal, and both diagonals.
- Q12:** (A) (a) No fold worked — the letter F genuinely has zero lines of symmetry.
- Q13:** (C) (c) T — a single vertical fold makes both sides match.
- Q14:** (B) (b) 3 — one through each vertex to the midpoint of the opposite side.
- Q15:** (B) (b) Because the unequal side lengths mean the two triangle halves formed by the diagonal don't match exactly.
- Q16:** (D) (d) B — a horizontal fold makes the top and bottom halves match.
- Q17:** (A) (a) 2 — both a vertical and a horizontal fold work on the letter H.
- Q18:** (C) (c) Yes — a square's diagonal folds also make both halves match, so they count as lines of symmetry.
- Q19:** (B) (b) The letter R — no fold makes it match itself exactly.
- Q20:** (D) (d) A circle — it has infinitely many lines of symmetry through its centre.
- Q21:** (A) (a) 5 — one regular fold from each vertex to the midpoint of the opposite side.
- Q22:** (C) (c) No — equal side lengths alone don't guarantee symmetry; the overall arrangement must mirror across the fold.
- Q23:** (B) (b) 6 — matching its 6 equal sides and angles.
- Q24:** (D) (d) 2 — both diagonals, but NOT the vertical/horizontal midlines (unless it's also a square).
- Q25:** (B) (b) It has at least one confirmed line of symmetry (vertical); other lines like diagonals still need separate checking.
- Q26:** (D) (d) 1 — the fold from the top vertex to the midpoint of the unequal base.
- Q27:** (A) (a) X — folding vertically or horizontally both make the letter match itself.
- Q28:** (A) (a) A circle has no fixed corners or edges to line up, so every line through its centre works as a fold; a square's corners restrict it to only 4 matching folds.

Q29: (C) (c) No — a scalene triangle has no equal sides at all, so no fold produces matching halves.

Q30: (B) (b) More than one, specifically 8 — a regular octagon has one line of symmetry for each of its 8 sides/vertices.

You've got this! Keep learning and shining! - Ruchi Math Coaching