Line of Symmetry

Explore ideas and representations

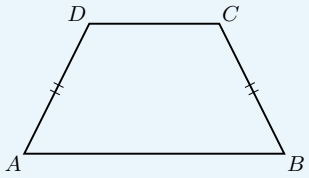
Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

A line of symmetry is a fold that makes both halves match exactly. Corresponding points lie the same distance from the fold. A non-square rectangle has 2 symmetry lines; a square has 4. Equal area on each side alone is not enough: the outlines must match.

Worked example

Find all lines of symmetry of this figure.



1. The left and right slanted sides are equal and equally placed.

2. A vertical center fold matches both bases to themselves and one slanted side to the other.

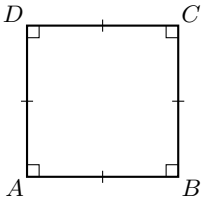
3. A horizontal fold would swap unequal bases, so there is only 1 symmetry line.

Answer: 1 line(s) of symmetry.

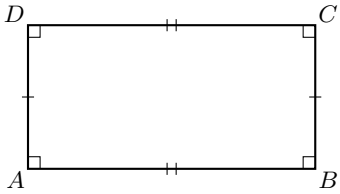
Practice Problems

Show your thinking.

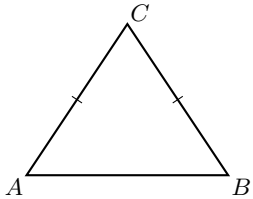
1. Draw every line of symmetry on the square and count them.



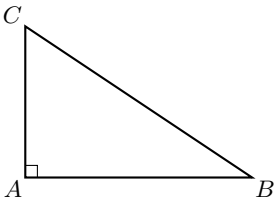
2. Identify the center folds that match this rectangle.



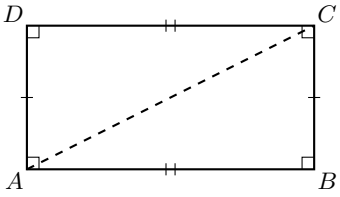
3. How many matching folds does this isosceles triangle have?



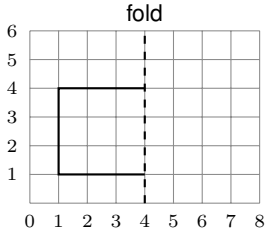
4. A triangle has perpendicular side lengths 3 and 2. Find its symmetry-line count.



5. A student draws a diagonal of this non-square rectangle and calls it a symmetry line. Explain the error.



6. Complete the outline on the right so the dashed line is a symmetry line.



Answer Key

1. 4 line(s) of symmetry.
2. 2 line(s) of symmetry.
3. 1 line(s) of symmetry.
4. 0 line(s) of symmetry.
5. The diagonal is not a symmetry line.
6. Reflect each shown corner across the dashed fold; join the reflected corners in the same order.

Step-by-Step Solutions

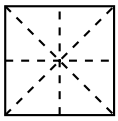
Follow each calculation, then check your own work.

Problem 1

1. The vertical and horizontal center folds match opposite sides.

2. Both diagonal folds also match all corners and sides.

3. That gives $2 + 2 = 4$ lines of symmetry.



Problem 2

1. The vertical center fold pairs the left and right sides.

2. The horizontal center fold pairs the top and bottom sides.

3. The diagonals do not match long sides to long sides, so there are 2 symmetry lines.

Problem 3

1. The top vertex lies above the midpoint of the base.

2. A vertical fold pairs the two equal slanted sides.

3. Only this center fold matches the figure, giving 1 symmetry line.

Problem 4

1. The perpendicular legs have different lengths, 3 and 2 units.

2. A fold swapping those legs cannot match their endpoints.

3. The three unequal side lengths allow no matching fold, so there are 0 symmetry lines.

Problem 5

1. The rectangle has unequal long and short sides.

2. The diagonal fold would place a long side on a short side, so their endpoints do not match.

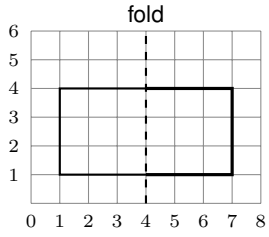
3. Only the vertical and horizontal center folds work: 2 symmetry lines.

Problem 6

1. The shown corner at column 1, row 1 is $4 - 1 = 3$ squares left of the fold.

2. Its partner is 3 squares right of the fold, at column $4 + 3 = 7$, row 1.

3. Repeat the equal-distance construction for every corner; corners on the fold stay fixed. Join corresponding segments.



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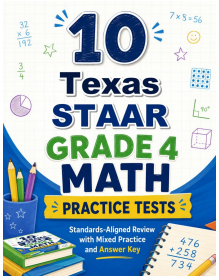

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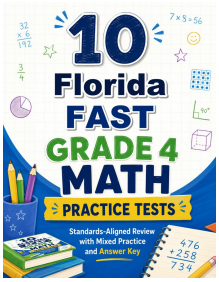

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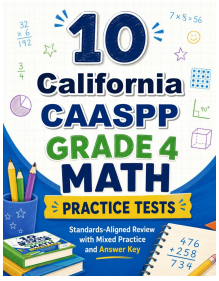

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