

A certain 4-sided figure has the following properties.

- Only one pair of opposite sides are parallel.
- Only one pair of opposite sides are equal in length.
- The parallel sides are not equal in length.

Which of the following must be true about the sides that are equal in length?

- A) They are perpendicular to each other.
- B) They are each perpendicular to an adjacent side.
- C) They are equal in length to one of the other two sides.
- D) They are not equal in length to either of the other two sides.
- E) They are not parallel.

Key

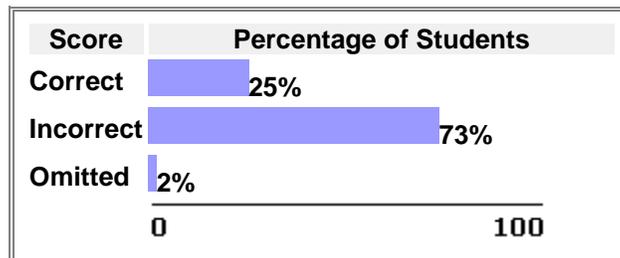
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2005 National Performance Results



Note:

- These results are for public and nonpublic school students.
- Percentages may not add to 100 due to rounding.

Mathematical Content Area: *Geometry* (Sub content classification:)
Mathematical Complexity: *Moderate Complexity*

Mathematical Content Area

Geometry

This content area focuses on identification of geometric shapes into transformations and combinations of those shapes. By grade 4, students are expected to be familiar with simple plane figures such as lines, circles, triangles, and rectangles, as well as solid figures such as cubes, spheres, and cylinders. They are also expected to be able to recognize examples of parallel and perpendicular lines. As students move to middle school and beyond, increased understanding should deepen of two- and three-dimensional figures, especially parallelism, perpendicularity, angle relations in polygons, congruence, similarity, and the Pythagorean theorem. Students at all grades are expected to show knowledge of symmetry and transformations of shapes and to identify images resulting from flips, rotations, or turns. Justifications and reasoning in both formal and informal settings are expected at grades 8 and 12.

Mathematical Complexity

Moderate Complexity

Items in the moderate-complexity category involve more flexibility of thinking and choice among alternatives than do those in the low-complexity category. They require a response that goes beyond the habitual, is not specified, and ordinarily has more than a single step. The student is expected to decide what to do, using informal methods of reasoning and problem-solving strategies, and to bring together skill and knowledge from various domains.

Description	Grade	Type	Difficulty
Use properties of quadrilaterals to solve a problem	8th	Multiple Choice	Hard