

Place a shape in a category hierarchy

NAME	DATE	SCORE
		/ 10

1 Cleo says, "Every parallelogram is a rectangle." Is Cleo right, and why?

- ☐ Yes: a parallelogram can have four right angles
- ☐ Yes: a parallelogram has two pairs of parallel sides, like a rectangle
- ☐ No: a parallelogram never has four right angles
- ☐ No: a parallelogram does not always have four right angles

2 Which statement is false?

- ☐ Every square is a rectangle. ☐ Every square is a parallelogram.
- ☐ Every parallelogram is a rectangle. ☐ Every rhombus is a parallelogram.

3 "A rhombus is a square." Is this always, sometimes or never true?

- ☐ Always true ☐ Sometimes true ☐ Never true

4 Which of these names fit every rhombus?

Tick every answer that is true.

- ☐ **A** Triangle
- ☐ **B** Rectangle
- ☐ **C** Pentagon
- ☐ **D** Parallelogram
- ☐ **E** Quadrilateral

5

"A triangle is a quadrilateral." Is this always, sometimes or never true? Explain how you know, using the sides and angles.

6

Ivy says, "Every rectangle is a square." Is Ivy right, and why?

- ☐ Yes: a rectangle can have four equal sides
- ☐ No: a rectangle does not always have four equal sides
- ☐ No: a rectangle never has four equal sides
- ☐ Yes: a rectangle has four right angles, like a square

7

Which statement is true?

- ☐ Every rhombus is a rectangle. ☐ Every quadrilateral is a parallelogram.
- ☐ Every parallelogram is a rectangle. ☐ Every square is a rhombus.

8

Emma says, "Every rhombus is a square." Is Emma right, and why?

- ☐ No: a rhombus never has four right angles ☐ Yes: a rhombus can have four right angles
- ☐ No: a rhombus does not always have four right angles
- ☐ Yes: a rhombus has four equal sides, like a square

9

Cleo says, "Every quadrilateral is a parallelogram." Is Cleo right, and why?

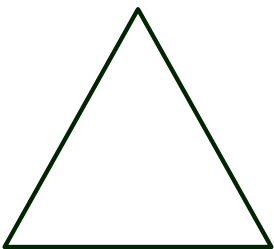
- ☐ Yes: a quadrilateral can have two pairs of parallel sides
- ☐ Yes: a quadrilateral has four sides, like a parallelogram
- ☐ No: a quadrilateral never has two pairs of parallel sides
- ☐ No: a quadrilateral does not always have two pairs of parallel sides

10 Ivy says, "Every square is a rectangle." Is Ivy right, and why?

- ☐ Yes: a square has four right angles
- ☐ No: a square has four equal sides, so it is not a rectangle
- ☐ Yes: a square has two pairs of parallel sides
- ☐ No: a rectangle must have two long sides and two short sides

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- 1 No: a parallelogram does not always have four right angles
- 2 Every parallelogram is a rectangle.
- 3 Sometimes true
- 4 D, E
Tick exactly these: D: Parallelogram; E: Quadrilateral. One missed or one extra is wrong.
- 6 No: a rectangle does not always have four equal sides
- 7 Every square is a rhombus.
- 8 No: a rhombus does not always have four right angles
- 9 No: a quadrilateral does not always have two pairs of parallel sides
- 10 Yes: a square has four right angles
- 5 A written explanation



A model answer: Never true. A quadrilateral has four sides. Every triangle has three sides, so a triangle is never a quadrilateral.

What counts as right: Counts as right if it makes these points: (1) the answer, never true; (2) a quadrilateral has four sides; (3) every triangle has three sides. Saying how the shapes look, without the sides or angles that define them, does not count.