

Grade 5 · Classifying Two-Dimensional Figures

· Worksheet Answer Key

Common Core 5.G.B.3, 5.G.B.4 · mathovore.fr

This answer key explains each of the 24 classification problems. Check which attribute decides each name, such as parallel sides, equal sides, or right angles, and review the hierarchy whenever a true-or-false answer surprises you.

Grade 5 Common Core: 5.G.B.3 · 5.G.B.4

Problem 1: Triangle by sides A

Exactly two sides are equal (5 and 5), and the third is different.

Isosceles

Problem 2: Triangle by sides B

All three sides are equal, so it is equilateral. An isosceles triangle needs at least two equal sides, so it is also isosceles.

Equilateral; yes, it is also isosceles.

Problem 3: Triangle by sides C

No two sides are equal.

Scalene

Problem 4: Triangle by angles A

One angle is exactly 90° .

Right triangle

Problem 5: Triangle by angles B

One angle, 100° , is greater than 90° , so the triangle is obtuse. Two angles are equal, which means two sides are equal.

Obtuse and isosceles

Problem 6: Triangle by angles C

All three angles are less than 90° .

Acute triangle

Problem 7: Classify both ways

The sides are 3 ft, 4 ft, and 5 ft, so no two are equal. The square corner shows a 90° angle.

Scalene and right

Problem 8: Parallelogram facts

The arrows show 2 pairs of parallel sides, so P is a parallelogram.

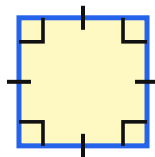
Opposite sides of a parallelogram are equal: bottom = 8 cm, left = 5 cm.

Perimeter: $8+5+8+5=26$ cm.

2 pairs; parallelogram; bottom 8 cm, left 5 cm; perimeter 26 cm.

Problem 9: Square or not

Four right angles make it a rectangle, and four equal sides make it a rhombus. Both together make a square.



Square

A square has 4 equal sides and 4 right angles.

Square

Problem 10: Rectangle riddle

Both pairs of opposite sides are parallel, so it is a parallelogram. Four right angles make it a rectangle. The sides are not all equal, so it is not a square.

Rectangle

Problem 11: One pair of parallel sides

A quadrilateral with a pair of parallel sides is a trapezoid.

The left and right sides are not parallel, so Q does not have two pairs of parallel sides. It is not a parallelogram.

Trapezoid; not a parallelogram.

Problem 12: Name the leaning shape

Opposite sides are parallel, so R is a parallelogram. All four sides are equal, so it is a rhombus.

A square must have four right angles, and R has none.

Rhombus

Problem 13: Squares and rectangles

A rectangle is a parallelogram with four right angles. Every square has four right angles and opposite sides parallel.

True

Problem 14: Rectangles and squares

A square needs four equal sides. A rectangle that is 6 inches long and 2 inches wide has four right angles but unequal sides.

False; a 6 in by 2 in rectangle is not a square.

Problem 15: Rhombus and parallelogram

A rhombus has four equal sides, so its opposite sides are parallel, which makes it a parallelogram with equal sides.

True

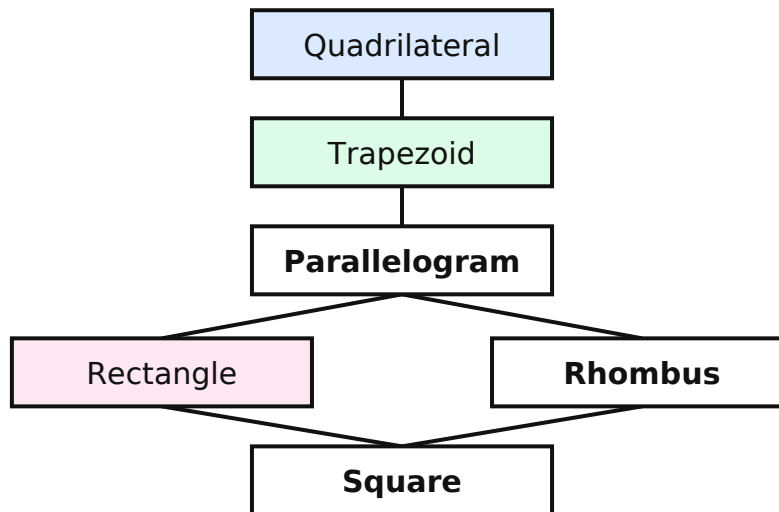
Problem 16: Shared attributes

Every parallelogram has both pairs of opposite sides parallel, and its opposite sides are equal in length. A rectangle is a parallelogram, so it has both attributes.

Opposite sides parallel; opposite sides equal.

Problem 17: Complete the hierarchy

(a) sits between Trapezoid and the shapes with right angles or equal sides: Parallelogram. (b) is the parallelogram with four equal sides: Rhombus. (c) is both a rectangle and a rhombus: Square.



The completed hierarchy.

(a) Parallelogram, (b) Rhombus, (c) Square

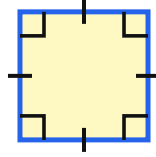
Problem 18: Name from measures

Four equal sides with opposite sides parallel make it a rhombus. The angles are not 90° , so it is not a square.

Rhombus

Problem 19: Pizza box top

It has four right angles and four equal sides, so it is a square. By the hierarchy it is also a rectangle, a rhombus, a parallelogram, and a trapezoid, and every one of these is a quadrilateral.



12 in by 12 in

The pizza box top.

All six names fit. The most specific is square.

Problem 20: Sort the shapes

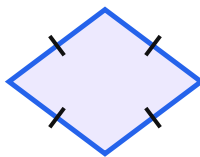
A is a square, B is a trapezoid with one pair of parallel sides, C is a rhombus, D is a parallelogram, and E is a rectangle.

Parallelograms have two pairs of parallel sides: A, C, D, and E. Rectangles have four right angles: A and E. Only B has exactly one pair of parallel sides.

Parallelograms: A, C, D, E. Rectangles: A, E. Trapezoid only: B.

Problem 21: Counterexample

A rhombus has four equal sides but its angles are not right angles.



Ethan's shape

A four-sided shape with equal sides.

A rhombus is a counterexample; it is not a square.

Problem 22: Riddles

(a) Opposite sides parallel makes a parallelogram. Equal sides without right angles gives a rhombus.

(b) A rectangle with four equal sides is a square.

(a) Rhombus. (b) Square.

Problem 23: Diego's quadrilateral

A quadrilateral with one pair of parallel sides is a trapezoid; this one is a right trapezoid.

A rectangle needs four right angles and two pairs of parallel sides. Diego's figure has only two right angles, so it is not a rectangle.

Trapezoid (right trapezoid); not a rectangle.

Problem 24: Triangle categories

An isosceles triangle has at least two equal sides. An equilateral triangle has three equal sides, so it has at least two.

True