

Grade 5 - Classifying Two-Dimensional Figures - Answer Key

Common Core 5.G.B.3, 5.G.B.4 · maths-pdf.fr/en/

Each answer explains which properties decide the name of the figure. When a shape belongs to several groups, the answer shows why. Check that your reasons use sides, angles or parallel lines.

Grade 5 · Common Core State Standards: **5.G.B.3, 5.G.B.4**

Exercise 1 - Name the figure

It has 4 equal sides and 4 right angles. That makes it a square.

Square

Exercise 2 - Squares and rectangles

A rectangle has 4 right angles and opposite sides equal. Every square has these properties.

True

Exercise 3 - Rectangles and squares

A rectangle that is 6 cm long and 3 cm wide has 4 right angles, but its sides are not all equal, so it is not a square.

False

Exercise 4 - Four equal sides

Two pairs of parallel sides make it a parallelogram. Four equal sides make it a rhombus. With no right angles it is not a square.

Rhombus

Exercise 5 - Properties of parallelograms

Answers can vary. Three correct properties:

- It has 4 sides, so it is a quadrilateral.
- It has two pairs of parallel sides.
- Opposite sides are equal in length.

4 sides, two pairs of parallel sides, opposite sides equal

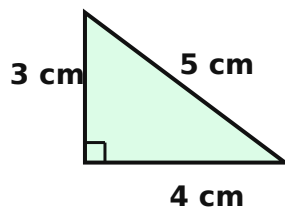
Exercise 6 - Triangle with three equal sides

All three sides are 5 cm, so the triangle is equilateral.

Equilateral

Exercise 7 - Right triangle sides

The sides 3, 4 and 5 are all different: scalene. There is one right angle: right triangle.



Scalene right triangle.

Scalene right triangle

Exercise 8 - Angles 40, 70, 70

All three angles are less than 90° .

Acute triangle

Exercise 9 - Angles 30, 30, 120

One angle, 120° , is greater than 90° .

Obtuse triangle

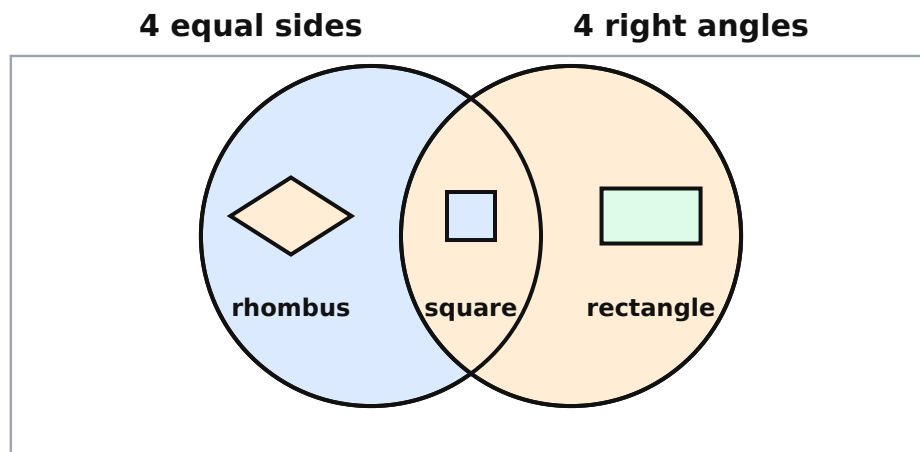
Exercise 10 - Sides 6, 6, 9

Two sides are equal and the third is different.

Isosceles

Exercise 11 - Place the shapes

The square has both properties, so it goes in the overlap. The 6 by 3 rectangle has only right angles. The rhombus has only equal sides.

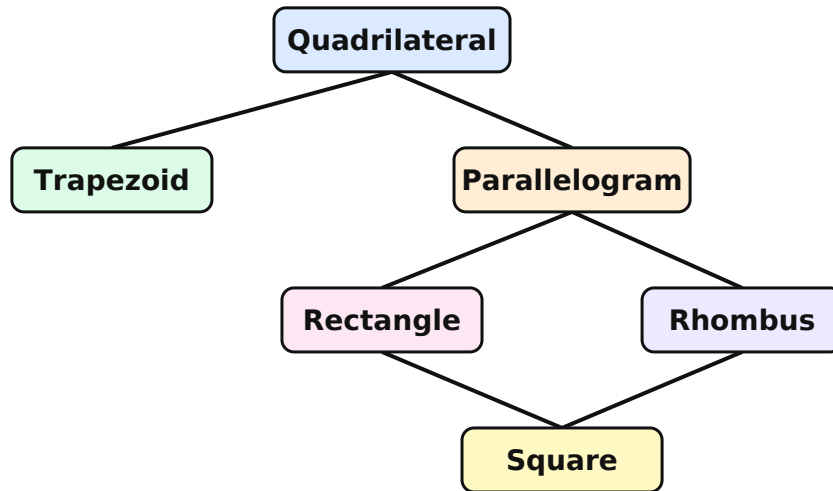


Completed Venn diagram.

Rhombus: left only; square: overlap; rectangle: right only

Exercise 12 - Complete the tree

A parallelogram with 4 right angles is a rectangle.

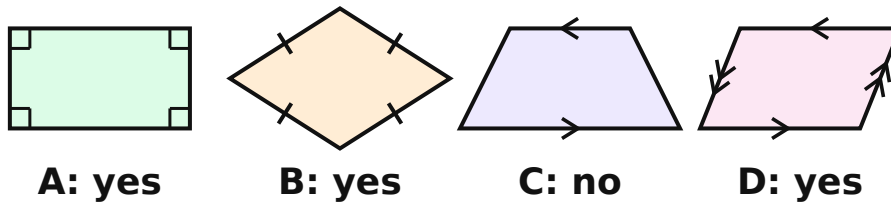


A tree diagram of the quadrilateral family.

Rectangle

Exercise 13 - Two pairs of parallel sides

A rectangle, a rhombus and a parallelogram each have two pairs of parallel sides. The trapezoid has only one pair.



A, B and D have two pairs.

A, B and D

Exercise 14 - Square or rhombus

A rhombus is a quadrilateral with 4 equal sides. A square has 4 equal sides, so it has the main property of a rhombus. The right angles are extra.

A square has 4 equal sides, so it is a rhombus.

Exercise 15 - Picture frame

Every property fits several groups.

- Square (most specific)
- Rectangle: 4 right angles
- Rhombus: 4 equal sides
- Parallelogram: two pairs of parallel sides
- Quadrilateral: 4 sides

Square, rectangle, rhombus, parallelogram, quadrilateral

Exercise 16 - Garden bed

The sides are not all equal, since 8 ft and 3 ft are different. It has four right angles, so it is a rectangle.

Not a square; it is a rectangle

Exercise 17 - Road sign

Three equal sides: equilateral. Each angle is less than 90° : acute.

Equilateral and acute

Exercise 18 - Rhombus must be a square

A rhombus has 4 equal sides, and this one has sides of 5 cm. A square needs 4 right angles. This rhombus has angles of 60° and 120° , so it has no right angle.

Priya is wrong: this rhombus is not a square.

Exercise 19 - Cutting a triangle

(a) All sides are different: scalene.

(b) One right angle: right triangle.

(c) $9+12+15=36$ inches.

(a) Scalene; (b) right; (c) 36 in

Exercise 20 - Quilt patches

(a) Two equal sides: isosceles.

(b) $5+5+8=18$ inches.

(c) A rhombus has 4 equal sides: $4\times 7=28$ inches.

(d) $28-18=10$.

(a) Isosceles; (b) 18 in; (c) 28 in; (d) the rhombus, by 10 in