

2D Figures Study Guide

1. What do rectangles & squares have in common? What is different?

Both are quadrilaterals, have right angles, two sets of parallel sides, and opposite sides equal. A square always has equal sides, but a rectangle might not. A square is a rectangle, but a rectangle is not always a square.

2. What do squares, rectangles, parallelograms, and rhombuses have in common?

All are quadrilaterals, opposite sides are equal & have two sets of parallel sides.

3. Put a check mark by the true statements. ✓

All rectangles are squares.	A rhombus is never a square.	All squares are parallelograms. ✓
A rhombus is always a square.	A kite is always a rhombus.	A kite is always a rectangle.
Some quadrilaterals are trapezoids. ✓	A rhombus is never a rectangle.	Some parallelograms are rhombuses. ✓
A rhombus is always a parallelogram. ✓	A kite is always a quadrilateral. ✓	A square is a rhombus with 4 right angles. ✓
All squares are rectangles. ✓	All rhombuses are rectangles.	All parallelograms are squares.
All rectangles are rhombuses.	All rhombuses are also squares.	A kite is always a square.
A square is a rectangle with four sides the same length. ✓	All squares & rectangles have opposite sides that are congruent. ✓	All parallelograms, rectangles, and squares have opposite angles that are congruent. ✓
If all 4 sides of a rhombus are equal, then it is a square.	A square is a parallelogram with four lines of symmetry. ✓	If all 4 sides of a rectangle are equal, then it is a square. ✓
If all 4 angles of a rectangle are equal, then it is a square.	A square is a quadrilateral with exactly one pair of parallel sides.	If all 4 angles of a parallelogram are equal, then it is a square.
A scalene triangle can be an obtuse triangle. ✓	A scalene triangle can be an equilateral triangle.	An equilateral triangle can be an obtuse triangle.
An isosceles triangle can be an equilateral triangle.		

4. What is true of both a square and a parallelogram? What is true of a parallelogram, but not a square?

Both have two sets of parallel sides, but a parallelogram does not have to have equal sides or right angles

5. Is a rectangle a parallelogram? Why?

Yes, it has two sets of parallel sides.

6. A square is also a rectangle, rhombus, parallelogram, kite, and a quadrilateral.

7. If two squares are put together, what is formed?

rectangle

8. How are a trapezoid and parallelogram related?

Both are quadrilaterals and have at least one set of parallel sides

9. What is the definition of a trapezoid?

A quadrilateral with only one set of parallel sides

10. A parallelogram is also a quadrilateral. A rhombus is also a parallelogram.

11. What is true of all quadrilaterals?

They are four sided polygons.

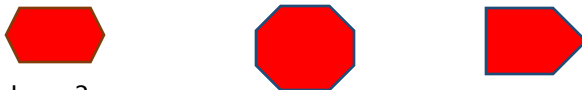
12. Complete the chart with as many examples as you can think of.

Polygons	Geometric Figures that are NOT polygons
Triangle Quadrilateral Pentagon Hexagon Octagon Etc.	Line Ray Oval Circle Point Etc.

13. Fill in the chart with all of the appropriate quadrilaterals.

Attributes	Quadrilateral(s)
Opposite sides congruent & parallel, opposite angles congruent	Rhombus, square, rectangle, parallelogram
All sides equal	Square, rhombus
2 pairs of opposite parallel sides, 4 congruent sides, 2 obtuse angles, and 2 acute angles	Rhombus
Exactly two pairs of parallel sides	Rhombus, square, rectangle, parallelogram
All four sides equal, but no right angles	Rhombus

14. Draw three polygons that have parallel sides and AREN'T quadrilaterals.



15. What is a polygon?

A closed figure with three or more straight sides

16. What property must a parallelogram have in order to be called a rectangle?

Right angles

17. What quadrilaterals can be classified as parallelograms?

Squares, rectangles, rhombuses

18. Draw a hierarchy diagram that shows how all quadrilaterals are related.

