Types of quadrilaterals

- Parallelogram
- Rectangle
- Square
- Rhombus
- Trapezoid (Variations: Right Trapezoid & Isosceles Trapezoid)
- Kite

One common property of all quadrilaterals is that the sum of all their angles equals 360°.

Let us look into the properties of different quadrilaterals.

Parallelogram

Properties of a parallelogram

- Opposite sides are parallel and congruent.
- Opposite angles are congruent.
- Adjacent angles are supplementary.
- Diagonals bisect each other and each diagonal divides the parallelogram into two congruent triangles.

Rectangle

Properties of a Rectangle

- Opposite sides are parallel and congruent.
- All angles are right.
- The diagonals are congruent and bisect each other (divide each other equally).
- Opposite angles formed at the point where diagonals meet are congruent.
- A rectangle is a special type of parallelogram whose angles are right.

Square

Properties of a square

- All sides and angles are congruent.
- Opposite sides are parallel to each other.
- The diagonals are congruent.
- The diagonals are perpendicular to and bisect each other.
- A square is a special type of parallelogram whose all angles and sides are equal.
- Also, a parallelogram becomes a square when the diagonals are equal and right bisectors of each other.

Rhombus

Properties of a Rhombus

- All sides are congruent.
- Opposite angles are congruent.
- The diagonals are perpendicular to and bisect each other.
- Adjacent angles are supplementary (For eg., ∠A + ∠B = 180°).
- A rhombus is a parallelogram whose diagonals are perpendicular to each other.

Trapezoid

Properties of a Trapezoid

- The bases of the trapezoid are parallel to each other (MN ∥ OP).
- No sides, angles and diagonals are congruent (Exception: Isosceles Trapezoids).

Special Trapezoids

Kite

Summary of properties

Summarizing what we have learnt so far for easy reference and remembrance

Property	Parallelogram	Rectangle	Rhombus	Square
All sides are congruent	✗	✗	✓	✓
Opposite sides are parallel and congruent	✓	✓	✓	✓
All angles are congruent & equal 90 degrees	✗	✓	✗	✓
Opposite angles are congruent	✓	✓	✓	✓
Diagonals are congruent	✗	✓	✗	✓
Diagonals are perpendicular	✗	✗	✓	✓
Diagonals bisect each other	✓	✓	✓	✓
Adjacent angles are supplementary	✓	✓	✓	✓