

## Quadrilateral:

A quadrilateral is a two-dimensional, closed shape with four sides, four vertices and four angles. Common types of quadrilaterals, each with specific properties, include squares, rectangles, parallelograms, rhombuses, trapezoids, and kites.

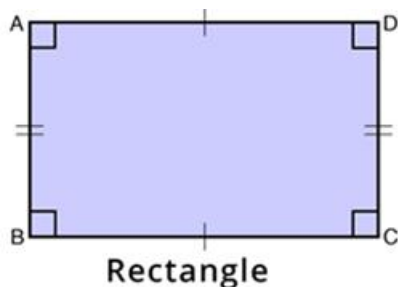
## General Properties of Quadrilaterals:

- **Four Sides:** A quadrilateral is defined by having four sides.
- **Four Vertices:** It also possesses four corners or vertices.
- **Two Diagonals:** A quadrilateral has two diagonals, which are lines connecting opposite vertices.

## Types of Quadrilaterals:

Here are the properties of seven special quadrilaterals:

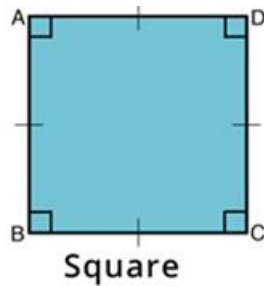
- Rectangle:



- A rectangle is a quadrilateral, meaning it has four sides.
- It has two pairs of equal sides.
- It has two pairs of parallel sides.
- The sides meet at right angle ( $90^\circ$ ).
- Diagonals bisect each other exactly in half.

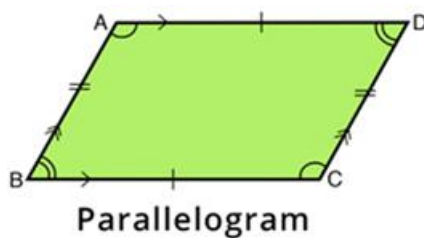
- Diagonals are equal in length.
- It has two lines of symmetry i.e. a vertical and a horizontal

- **Square:**



- A square is a quadrilateral, meaning it has four sides.
- All four sides are equal in length.
- It has two pairs of parallel sides
- The sides meet at right angle ( $90^\circ$ ).
- Diagonals are equal in length.
- Diagonals bisect each other at  $90^\circ$ .
- It has four lines of symmetry.

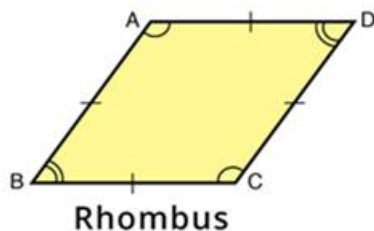
- **Parallelogram:**



- A parallelogram is a quadrilateral, meaning it has four sides.

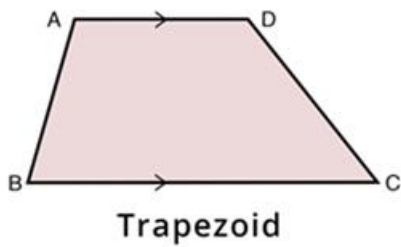
- It has two pairs of equal sides.
- It has two pairs of parallel sides.
- It has two pairs of equal angles.
- Diagonals bisect each other at  $90^\circ$ .
- It has zero lines of symmetry.

- **Rhombus:**



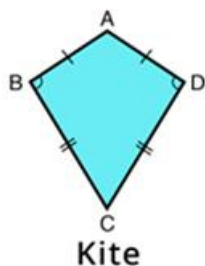
- A rhombus is a quadrilateral, meaning it has four sides.
- All four sides are equal in length.
- It has two pairs of parallel sides
- It has two pairs of equal angles.
- Diagonals bisect each other at  $90^\circ$ .
- It has zero lines of symmetry.
- Diagonals bisect each other
- Diagonals are of unequal length

- **Trapezoid (or Trapezium):**



- A trapezium is a quadrilateral, meaning it has four sides.
- It has at least one pair of opposite sides parallel called bases.
- Non-parallel sides are called legs.
- It has two more sides which are non-parallel to each other called legs.
- The diagonals of a trapezium always intersect each other.
- An isosceles trapezium has non-parallel lines of equal length and one line of symmetry i.e. vertical line of symmetry.

### Kite:



- A kite is a quadrilateral, meaning it has four sides.
- It has no sides parallel
- Has two distinct pairs of equal-length adjacent sides.
- One pair of opposite angles is equal.
- The diagonals intersect at  $90^\circ$ .