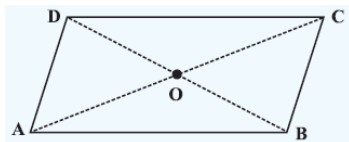


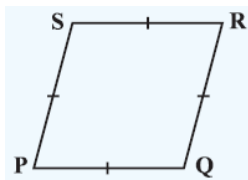
Chapter – 3

Understanding Quadrilaterals

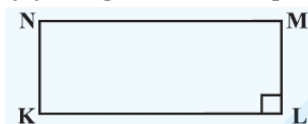
- **Parallelogram:** A quadrilateral with each pair of opposite sides parallel.
 - (1) Opposite sides are equal.
 - (2) Opposite angles are equal.
 - (3) Diagonals bisect one another.



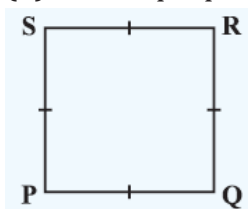
- **Rhombus:** A parallelogram with sides of equal length.
 - (1) All the properties of a parallelogram.
 - (2) Diagonals are perpendicular to each other.



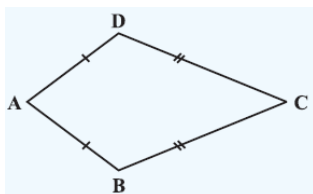
- **Rectangle:** A parallelogram with a right angle.
 - (1) All the properties of a parallelogram.
 - (2) Each of the angles is a right angle.
 - (3) Diagonals are equal.



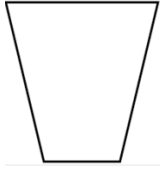
- **Square:** A rectangle with sides of equal length.
 - (1) All the properties of a parallelogram, rhombus and a rectangle.



- **Kite:** A quadrilateral with exactly two pairs of equal consecutive sides
 - (1) The diagonals are perpendicular to one another
 - (2) One of the diagonals bisects the other.
 - (3) In the figure $m\angle B = m\angle D$ but $m\angle A \neq m\angle C$.



- **Trapezium:** A quadrilateral having exactly one pair of parallel sides.



- **Diagonal:** A simple closed curve made up of only line segments. A line segment connecting two non-consecutive vertices of a polygon is called diagonal.



- **Convex:** The measure of each angle is less than 180° .
- **Concave:** The measure of at least one angle is more than 180° .
- **Quadrilateral:** Polygon having four sides.
- **Element of quadrilateral:**
 - (i) **Sides:** Line segments joining the points.
 - (ii) **Vertex:** Point of intersection of two consecutive sides.
 - (iii) **Opposite sides:** Two sides of a quadrilateral having no common end point.
 - (iv) **Opposite Angles:** Two angles of a quadrilateral not having a common arm.
 - (v) **Diagonals:** Line segment obtained by joining the opposite vertices.
 - (vi) **Adjacent Angles:** Two angles of a quadrilateral having a common arm.
 - (vii) **Adjacent Sides:** Two sides of a quadrilateral having a common end point.