Educonclave

QUADRILATERALS

- A closed figure having four sides, four angles and four vertices is called a quadrilateral.
- The sum of the four angles of a quadrilateral is 360°.

NECESSARY CONDITIONS OF A PARALLELOGRAM

- In a parallelogram, opposite sides are equal.
- In a parallelogram, opposite angles are equal.
- The diagonals of a parallelogram bisect each other.

TYPES OF QUADRILATERALS

- **Trapezium**

  If one pair of opposite sides of a quadrilateral are parallel, then the quadrilateral is called a trapezium.

- **Parallelogram**

  If both pairs of opposite sides of a quadrilateral are parallel, then the quadrilateral is a parallelogram.

- **Rectangle**

  In a parallelogram, if one angle is right angle, then the quadrilateral is called a rectangle.

- **Rhombus**

  In a parallelogram if all the four sides be equal, then the quadrilateral is a rhombus.

- **Square**

  In a quadrilateral if all the four sides are equal and one angle is right angle, then all the other three angles are also right angles. Such a quadrilateral is called a square.

SUFFICIENT CONDITIONS FOR A QUADRILATERAL TO BE PARALLELOGRAM

- If each pair of opposite sides of a quadrilateral is equal, then it is a parallelogram.
- If in a quadrilateral, each pair of opposite angles is equal, then it is a parallelogram.
- If the diagonals of a quadrilateral bisect each other, then it is a parallelogram.
- A quadrilateral is a parallelogram if a pair of opposite sides is equal and parallel.

MID-POINT THEOREM

- The line segment joining the mid-points of two sides of a triangle is parallel to the third side and equal to half of it.
- The line drawn through the mid-point of one side of a triangle, parallel to another side bisects the third side.