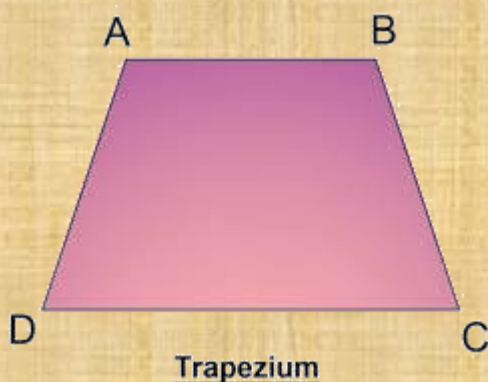


CHAPTER 03

CONSTRUCTION OF QUADRILATERALS

Trapezium:

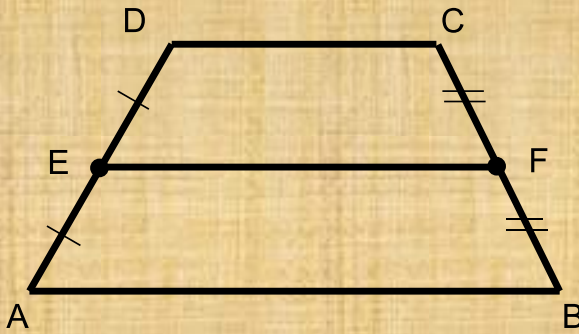
A quadrilateral in which one pair of opposite sides is parallel and the other pair of opposite sides is non – parallel is called trapezium.



Properties:

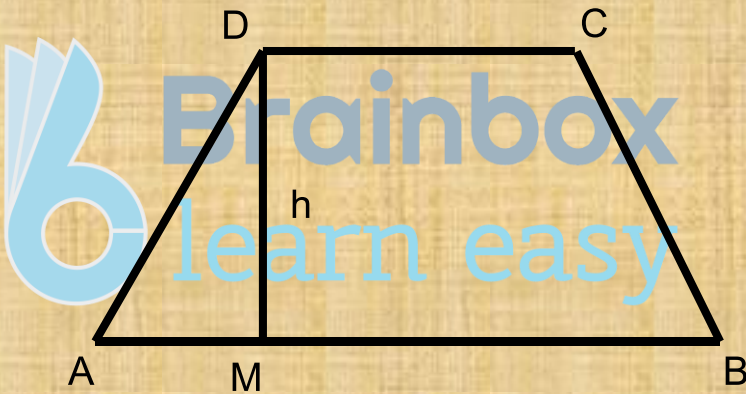
In trapezium ABCD,

- The parallel sides AB and CD are called the 'base' of the trapezium.
i.e. $\overline{AB} \parallel \overline{CD}$
- The other two non – parallel sides $\overline{BC}$ & $\overline{AD}$ are called its 'legs'.
- Diagonals intersect each other proportionally in the ratio of lengths of parallel sides.
- The line joining the mid – points of the oblique (Non – parallel) sides is half the sum of the parallel sides and is called the median.



$$\text{Median} = \frac{1}{2} \times \text{sum of parallel sides} = \frac{1}{2}(AB + DC) = EF$$

- By joining the midpoints of adjacent sides of a trapezium, four similar triangles are obtained.
- If a trapezium is inscribed in a circle, then it is an isosceles trapezium.



$$AC^2 + BD^2 = BC^2 + AD^2 + 2AB + 2AB.CD$$