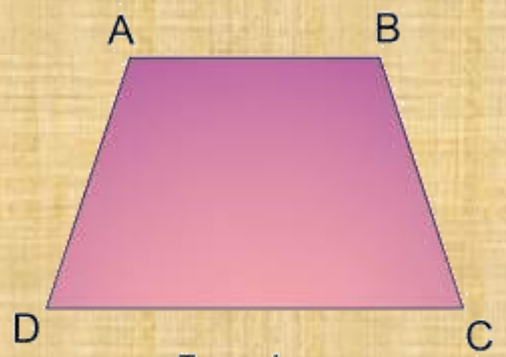
CHAPTER 03

Understanding 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.

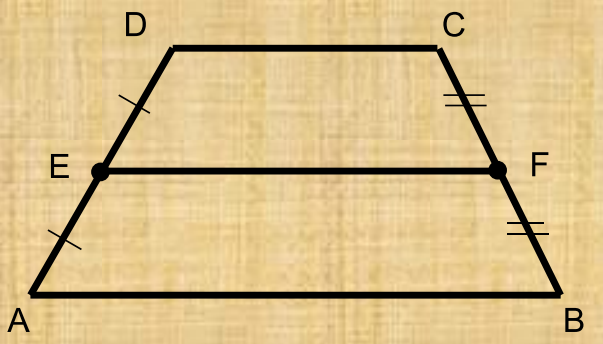


Trapezium

Properties:

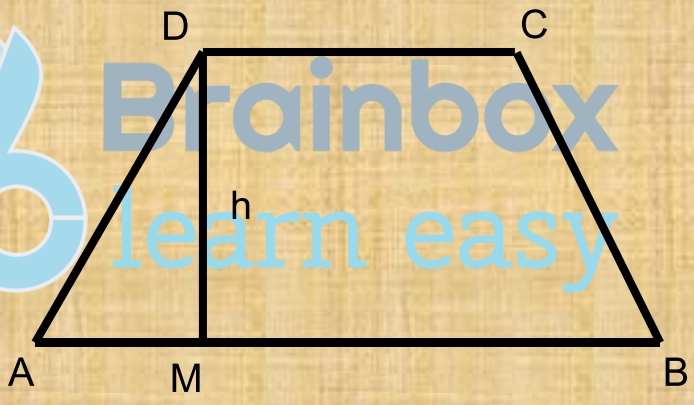
In trapezium ABCD,

- The parallel sides AB and CD are called the 'base' of the trapezium.
  i.e. $\overline{AB} \| \overline{CD}$
- 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.



Median = $\frac{1}{2}$ x 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.



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