CHAPTER 4

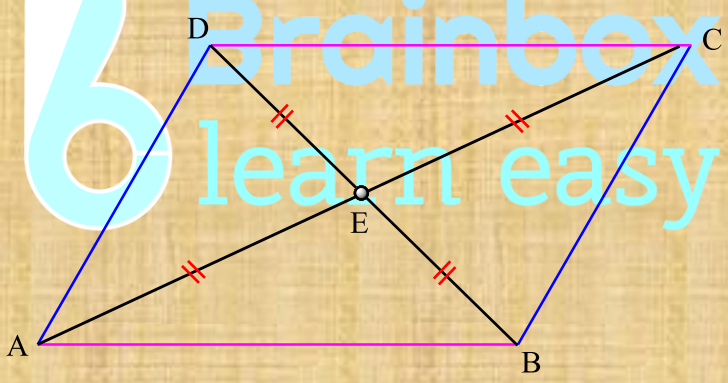
Practical Geometry

Construction of special quadrilaterals:

In the previous section, we have seen that five measurements are needed to construct a unique quadrilateral. But to construct special quadrilaterals such as parallelograms, rhombuses, rectangles asn squares using their characteristic properties, we need fewer that five elements.

Let us recall properties of parallelogram, Rectangle, Rhombus, Square. The interesting fact is all of them share some common properties. So, if you know the common properties there. You can easily remember all their properties. In this video we learn common properties and also how to remember those properties easily.

1. **Parallelogram:**



Properties:

(i) Opposite sides are parallel AB || DC and AD || BC.

(ii) Opposite sides are equal AB = DC and AD = BC.

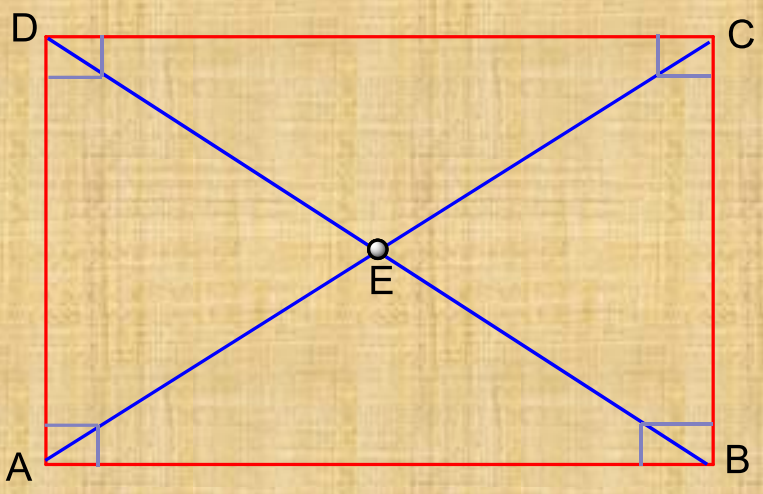
(iii) Opposite angles are equal.

$\angle A = \angle C$ and $\angle B = \angle D$

(iv) Diagonals angles are equal.

AE = EC and BE = ED

2. **Rectangle**:



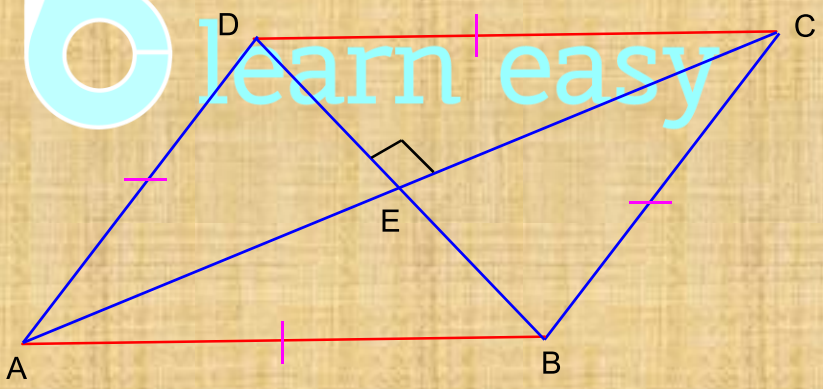
Since a rectangle is also a parallelogram. So, all and parallelograms properties plus.

(v) Each angle is equal to 90^o.

$$\angle A = \angle B = \angle C = \angle D = 90^o$$

(vi) Diagonals are AC = BD equal.

3. **Rhombus**:



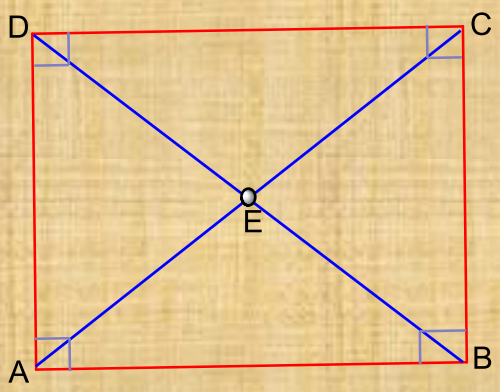
Properties:

Since a rhombus is also a parallelogram. So, all four parallelograms properties plus.

vii) All four sides are equal AB = BC = CD = DA.

viii) Diagonals are perpendicular.

4. **Square:**



Since a square is also a parallelogram, a rectangular and a rhombus. So, it satisfies all the eight (4 + 2 + 2 = 8) properties.