

CLASS	VI
SUBJECT	MATHS
TOPIC	Understanding Elementary Shapes
SUBTOPIC	Types of Quadrilateral and its properties.
NO. OF SESSIONS	1

Introduction:

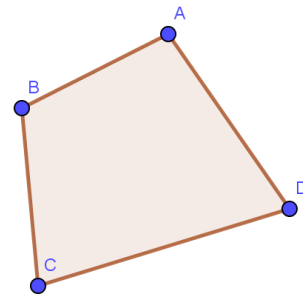
Quadrilateral : Four sided polygon is known as Quadrilateral.

ABCD is a quadrilateral

Sides: AB, BC, CD, DA

Angles: $\angle A$, $\angle B$, $\angle C$, $\angle D$

Vertices: A, B, C, D

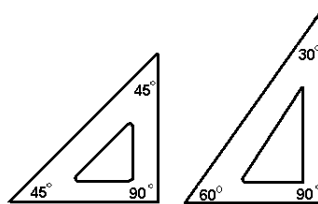


Activity:

Taka a Set Square .

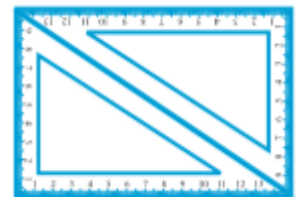
One is $30^\circ - 60^\circ - 90^\circ$ set-square,

Other is $45^\circ - 45^\circ - 90^\circ$ set square.



RECTANGLE:

Join a pair of $30^\circ - 60^\circ - 90^\circ$ set-square and Place them as shown in the figure. We get a 4 sided figure "Rectangle".

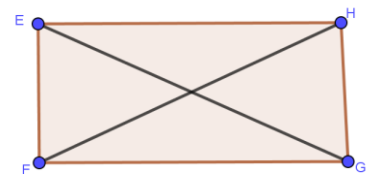


Observation:

Opposite sides are equal.

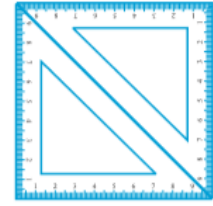
All angles are equal and they measure 90° .

Diagonals EG, FH are equal in measure.



SQUARE:

Join a pair of $45^\circ - 45^\circ - 90^\circ$ set-squares and Place them as shown in the figure. We get a 4 sided figure "Square".

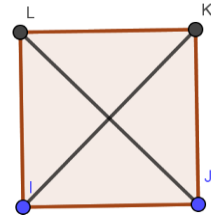


Observation

All sides are equal.

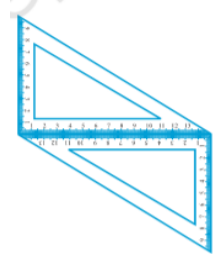
All angles are equal and they measure 90° .

Diagonals EG, FH are equal in measure.



PARALLELOGRAM:

Join a pair of $30^\circ - 60^\circ - 90^\circ$ set-squares in a different position as shown in figure. We get a 4-sided polygon "Parallelogram".



Observation:

Opposite sides are equal.

Opposite sides are parallel.

Opposite angles are equal and parallel.

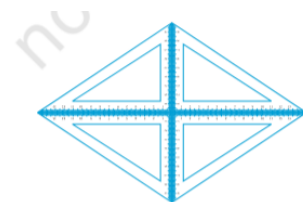
RHOMBUS:

Join four $30^\circ - 60^\circ - 90^\circ$ set-squares as shown to get a "Rhombus".

Observation:

All sides are equal.

Diagonals are perpendicular to each other.



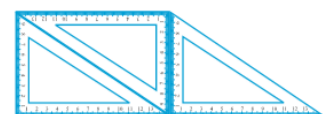
TRAPEZIUM:

If you use several set-squares you can build a shape like the one given here.

Observation:

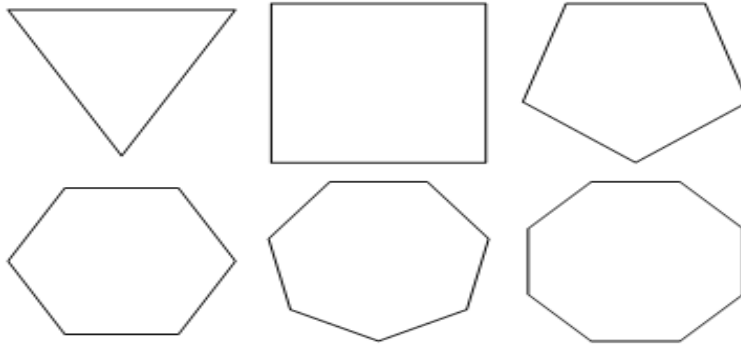
One of the opposite sides are parallel.

Other two sides are not parallel.



REGULAR POLYGONS

Polygons whose sides are equal in measure are called Regular polygons.



A regular polygon with

3 Sides : Equilateral Triangle

4 Sides: Square

5 Sides : Regular Pentagon

6 Sides: Regular Hexagon

7 Sides : Regular Heptagon

8 Sides : Regular Octagon

9 Sides: Regular Nonagon

10 Sides: Regular Decagon

Assignment:

1. Give reasons for the following :

- (a) A square can be thought of as a special rectangle.
- (b) A rectangle can be thought of as a special parallelogram.
- (c) A square can be thought of as a special rhombus.
- (d) Squares, rectangles, parallelograms are all quadrilaterals.
- (e) Square is also a parallelogram.

Homework : NCERT Exercise :5.7 Q.No 1 and 3