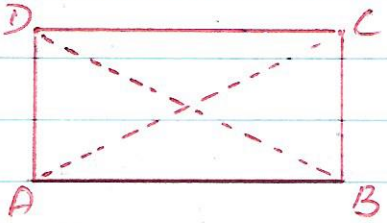
Revision Note :

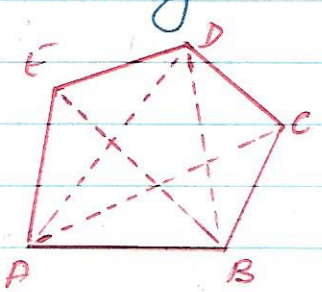
Chapter - 3 : Understanding Quadrilateral.

1) Polygon : A simple closed curve made up of only line segments is called a polygon.

2) Classification of polygon : Triangle (3), Quadrilateral (4), Pentagon (5) Hexagon (6), Heptagon (7), Octagon (8), Nonagon (9), Decagon (10)

3) Diagonals : A diagonal is a line segment connecting two non-consecutive vertices of a polygon.

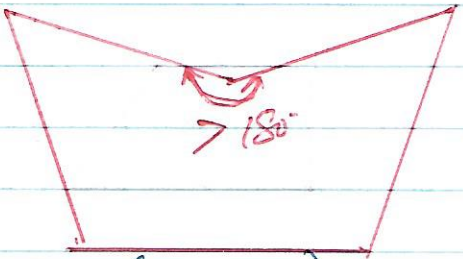




4) Convex and concave polygon :

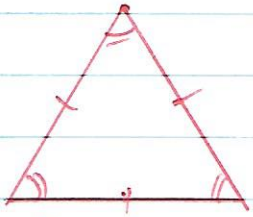
Convex Polygon : A polygon with interior angles less than 180°
Concave Polygon : Polygon with one or more interior angles more than 180°.

(convex)

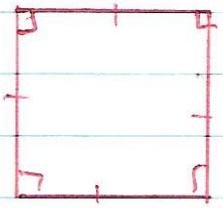


(concave)

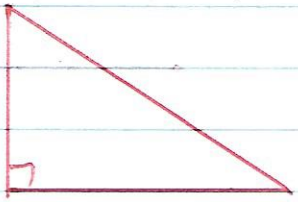
5) Regular and irregular polygon :
A regular polygon is both 'equiangular' and 'equilateral'.



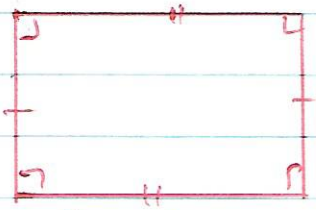
Regular



Regular



Irregular



Irregular.

6) Angle Sum Property :

Sum of interior angle of a polygon of n sides :
$= (n-2) \times 180°$

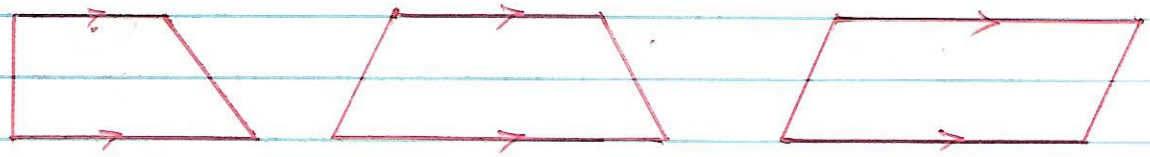
Each angle $= \frac{(n-2) \times 180°}{n}$

Sum of interior angles:
Triangle - 180°
Quadrilateral - 360°
Pentagon - 540°

So, each time we add a side (triangle to quadrilateral, quadrilateral to pentagon ...) we add another 180° to the total.

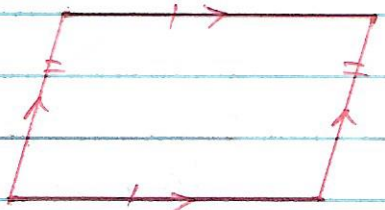
7) Sum of the Measures of the Exterior Angles of a Polygon.
"The sum of the measures of the external angles of any polygon is 360°".

8.) Kinds of Quadrilaterals.
a) Trapezium : Trapezium is a quadrilateral with a pair of parallel sides.



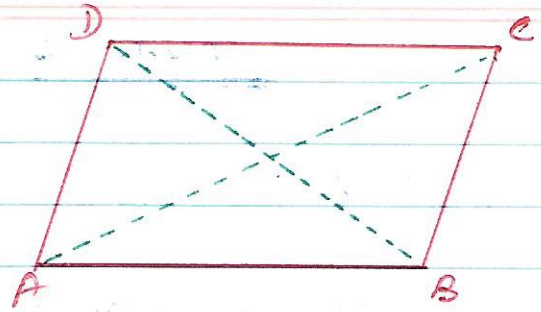
b) Kite : is a special type of quadrilateral.

c) Parallelogram : Two opposite sides are parallel and equal.



9) Elements of a parallelogram :

i) Opposite sides
ii) Opposite Angles
iii) Adjacent sides
iv) Adjacent angles



Property : The opposite sides of a parallelogram are equal.

10) Angles of a Parallelogram :

Property : The opposite angles of a parallelogram are equal.

11) Diagonals of a parallelogram :

Property : The diagonals of a parallelogram bisect each other (at the point of their intersection).

12) Rhombus : Opposite sides are equal and parallel

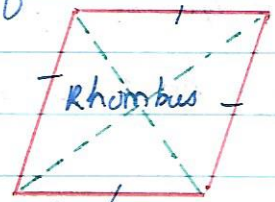
Property : The diagonals of a rhombus are perpendicular bisectors of one another.

13) Rectangle : is a parallelogram in which every angle is right angle.

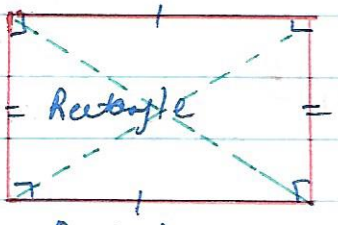
Property : The diagonals of a rectangle are of equal length.

14) Square : A square is a rectangle with equal side.

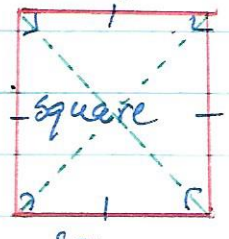
Property : The diagonals of a square are perpendicular bisector of each other.



Rhombus



Rectangle



Square