UNDERSTANDING QUADRILATERALS

INTRODUCTION OF POLYGON

POLYGONS

A simple closed curve made up of only the line segments is called a polygon. The simplest polygon is a triangle which is made up of 3 line segments. Let us classify the polygons according to the number of sides (or vertices) they have :

Number of sides or vertices	Name of the polygon	Shape
3	Triangle	\triangle
4	Quadrilateral	\Box
5	Pentagon	\bigtriangleup
6	Hexagon	\bigcirc
7	Heptagon	\bigcirc
8	Octagon	\bigcirc
9	Nonagon	\bigcirc
10	Decagon	\bigcirc
÷	÷	
n	n-gon	

CLASS 8

1 Diagonals of a Polygon

A diagonal is a line segment connecting two non-consecutive vertices of a polygon. Thus, in the figure ABCDEF is a polygon and each of the line segments AC, AD, AE, BD, BE, BF, CE, CF, DF is a diagonal of the polygon.



2 Interior and Exterior Angle of a Polygon

An angle formed by two consecutive sides of a polygon is called an interior angle or simply an angle of the polygon.

In the figure $\angle 1$, $\angle 2$, $\angle 3$, $\angle 4$ and $\angle 5$ are interior angles of the polygon (pentagon) ABCDE. If we produce a side of a polygon, an exterior angle is formed.



In the figure, the side AB has been produced to F to form the exterior angle CBF marked as $\angle 6$.

 $\angle ABC + \angle CBF = 180^{\circ}$ [Linear pair]

or $\angle 2 + \angle 6 = 180^{\circ}$

Thus in a polygon.

Interior angle + Exterior angle = 180° .