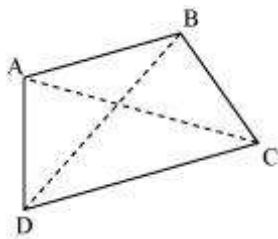


16. Quadrilaterals

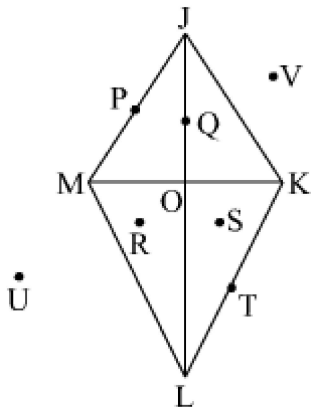
- **Quadrilateral:** A quadrilateral is a four-sided polygon.



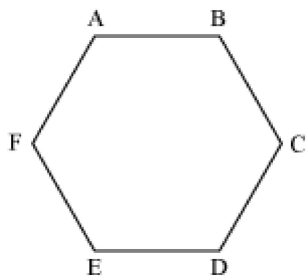
For the given quadrilateral ABCD:

- Possible names of quadrilateral are $\square ABCD$, $\square BCDA$, $\square CDAB$ and $\square DABC$.
- AB, CD and BC, DA are the pairs of **opposite sides**.
- AB, BC; BC, CD; CD, DA and DA, AB are the pairs of **adjacent sides**.
- A, C and B, D are the pairs of **opposite vertices**.
- AC and BD are the **diagonals** of quadrilateral ABCD.
- $\angle A$, $\angle C$ and $\angle B$, $\angle D$ are pairs of **opposite angles**.
- $\angle B$, $\angle C$; $\angle A$, $\angle B$; $\angle C$, $\angle D$ and $\angle D$, $\angle A$ are the pairs of **adjacent angles**.

For the given quadrilateral JKLM:

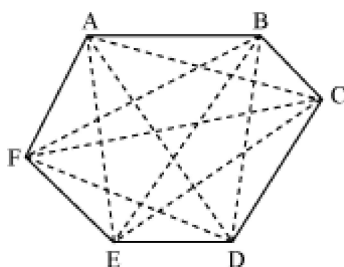


- Points lying in the **interior** of the quadrilateral are Q, R, S and O.
 - Points lying in the **exterior** of the quadrilateral are V and U.
 - Points lying on the **boundary** of the quadrilateral are P and T.
 - The interior and boundary together form the **region** of the quadrilateral.
- A **polygon** is a simple closed curve made up of line segments. ABCDEF is a polygon.



The attributes with respect to polygon ABCDEF are:

1. The line segments AB, BC, CD, DE, EF, and FA are known as the **sides of the polygon** ABCDEF.
2. Any two sides with common end points are called **adjacent sides**. AB and BC are adjacent sides with common end point B.
3. The meeting point of a pair of sides of a polygon is known as **vertex**. In the polygon ABCDEF, sides AB and BC meet at point B. So, point B is called the vertex of the polygon. Similarly, the other vertices are A, C, D, E, and F.
4. The line joining any two non-adjacent vertices of a polygon is known as its **diagonal**.



In the polygon ABCDEF, the diagonals are AC, AD, AE, BD, BE, BF, CE, CF, and DF.

- A polygon's name is based on the number of its sides.

Number of sides	Figure	Name
3		Triangle
4		Quadrilateral
5		Pentagon
6		Hexagon
8		Octagon