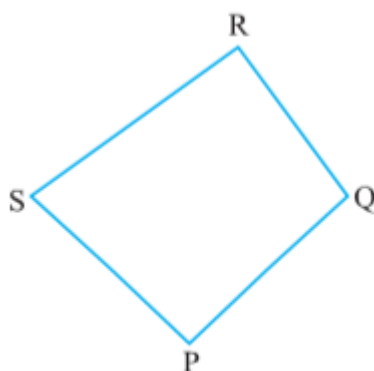


<b>CLASS</b>	<b>VI</b>
<b>SUBJECT</b>	<b>MATHEMATICS</b>
<b>TOPIC</b>	<b>BASIC GEOMETRICAL IDEAS</b>
<b>SUB TOPIC</b>	<b>QUADRILATERALS</b>
<b>NO OF SESSIONS</b>	<b>1</b>

### Definitions

**QUADRILATERAL:** A Polygon (a simple closed curve made-up of line segment) with four vertices, four angles and four line-segments is called a quadrilateral.

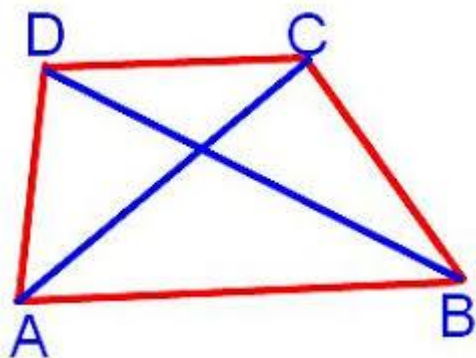
**NAMING THE VERTICES OF A QUADRILATERAL:** The naming of vertices is done in cyclic manner.



This is quadrilateral PQRS.

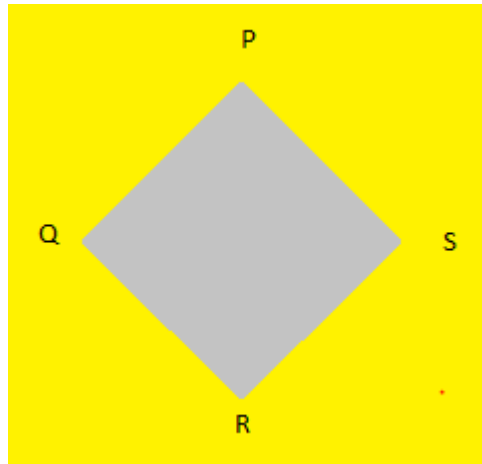
In the above diagram, the naming is done in an continuous anti-clockwise manner. The naming can be done in clockwise manner also.

**ELEMENTS OF A QUADRILATERAL:** For example, a Quadrilateral ABCD will have the following elements



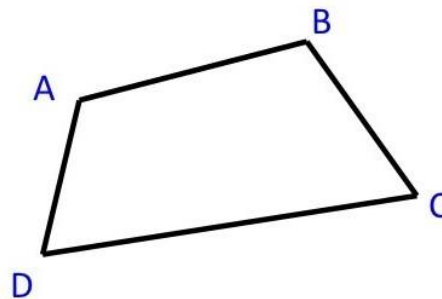
Elements	Number	Name
Sides	4	AB, BC, CD and DA
Vertices	4	A, B, C and D
Angles	4	$\angle DAB$ , $\angle ABC$ , $\angle BCD$ and $\angle CDA$
Daigonals	2	AC and BD

**REGION OF A QUADRILATERAL:** For Example, in Quadrilateral PQRS,



**INTERIOR REGION:** The region enclosed by the Line Segments of a Quadrilateral is known as Interior region. This is shown as grey colour in above diagram

**EXTERIOR REGION:** The region outside the boundary of the quadrilateral is known as Exterior region. It is shown as yellow colour in the above diagram.



**ADJACENT SIDES IN A QUADRILATERAL:** Two sides of a quadrilateral which have a common end point are called adjacent sides.

**Example:** In the above mentioned Quadrilateral ABCD,

AD and DC are the adjacent sides with common end point D

DC and CB are the adjacent sides with common end point C

CB and BA are the adjacent sides with common end point B

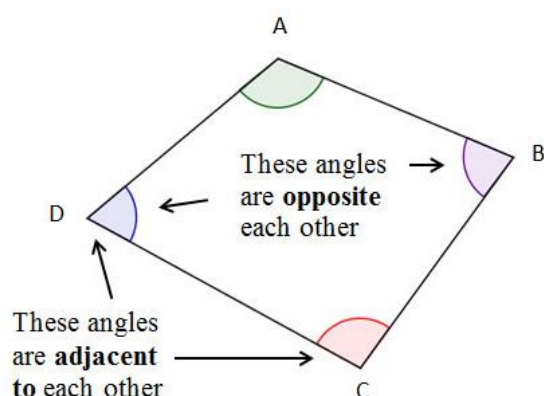
BA and AD are the adjacent sides with common end point A

**OPPOSITE SIDES IN A QUADRILATERAL:** Two sides of a quadrilateral are called its opposite sides if they do not have a common end point.

**Example:** In the above mentioned Quadrilateral ABCD,

AB and DC are the opposite sides

AD and BC are the opposite sides



**ADJACENT ANGLES IN A QUADRILATERAL:** Two angles of a quadrilateral having a common arm are called its adjacent angles.

**Example:** In the above mentioned Quadrilateral ABCD,

$\angle ADC$  and  $\angle DCB$  are the adjacent angles with common arm DC

$\angle DCB$  and  $\angle CBA$  are the adjacent angles with common arm CB

$\angle CBA$  and  $\angle BAD$  are the adjacent angles with common arm BA

$\angle BAD$  and  $\angle ADC$  are the adjacent angles with common arm AD

**OPPOSITE ANGLES IN A QUADRILATERAL:** Two angles of a quadrilateral having no common arm are known as opposite angles.

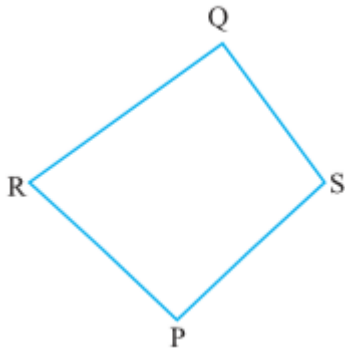
$\angle ADC$  and  $\angle CBA$  are the opposite angles

$\angle DCB$  and  $\angle BAD$  are the opposite angles

**ASSIGNMENT:**

1. State True or False

- i. Always in a Quadrilateral, there are 4 pairs of adjacent sides and 2 pairs of opposite sides.
- ii. In a Quadrilateral, intersecting point of the diagonals always lies in the interior region.



iii. The above Quadrilateral naming is following the cyclic order.

iv. Quadrilateral is the smallest possible polygon

2. Fill in the blanks

- i. A diagonal of a quadrilateral is a line segment that joins two ..... vertices of the quadrilateral.
- ii. A quadrilateral has ..... diagonals
- iii. In a Quadrilateral, there are ..... pairs of adjacent angles and ..... pairs of opposite angles
- iv. In word Quadrilateral, Quadri means ..... and Lateral means .....

**HOMEWORK : NCERT Exercise-4.5**