Page No.
Date

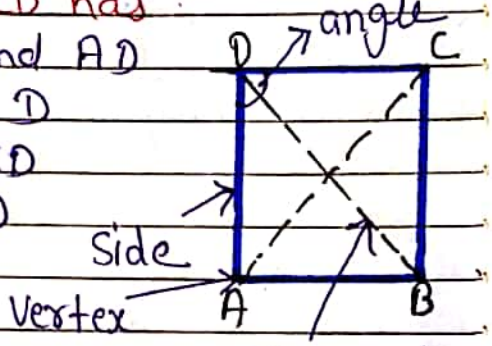
B. B. S. S. Sec. School

Class - VIII th Sub - Maths

Ch - 7 Understanding Shapes

Quadrilateral → A closed figure with four sides

* The quadrilateral ABCD has
  (i) Four sides AB, BC, CD and AD
  (ii) Four vertices A, B, C and D
  (iii) Four angles ∠A, ∠B, ∠C and ∠D
  (iv) Two diagonals AC and BD



Adjacent Sides → AB, BC ; BC, CD ; CD, DA ; DA, AB

Opposite Sides → AB and CD ; AD and BC

Adjacent angles → ∠A and ∠B ; ∠B and ∠C ; ∠C and ∠D, ∠D and ∠A

Opposite angles → ∠A and ∠C ; ∠B and ∠D

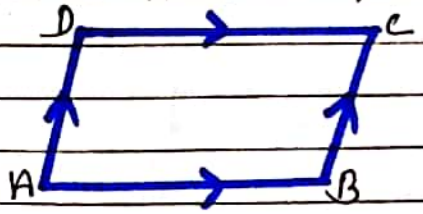
Angle sum property of quadrilateral → The sum of four interior angles of a quadrilateral is 360°.

Scanned with CamScanner

Page No.
Date

Classification of quadrilaterals →

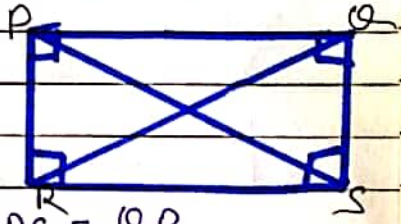
1. Parallelogram →



Properties of parallelogram →

I. Opposite sides $AB = DC$ and $AD = BC$
II. Opposite angles $\angle A = \angle C$ and $\angle D = \angle B$
III. Diagonals AC and BD bisect each other
IV) $AD \parallel BC$ and $AB \parallel DC$

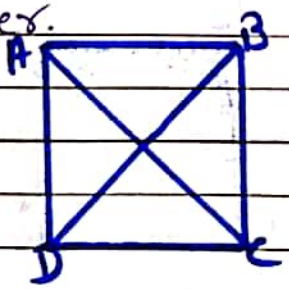
2. Rectangle →



Properties of Rectangle →

I. Opposite sides $PQ = SR$ and $PS = QR$
II) All angles $\angle P = \angle Q = \angle R = \angle S = 90°$
III) Diagonals $PR = SQ$
IV) Diagonals bisect each other.

3. Rhombus →



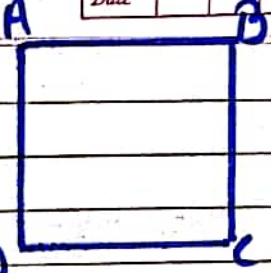
Properties of Rhombus →

I) Opposite sides are parallel.
II) All sides are equal.
III) Opposite angles are equal.
IV) Diagonal bisect each other at right angle.
V) Diagonals bisect opp angles of vertices

Scanned with CamScanner

Page No.
Date

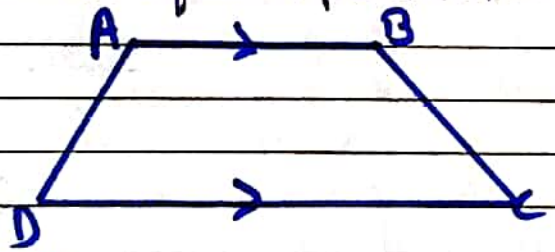
4. Square :→



Properties of square →
(i) Opposite sides are parallel.
(ii) All sides are equal.
(iii) All angles $\angle A = \angle B = \angle C = \angle D = 90^\circ$
(iv) Diagonals are equal and bisect each other at right angles.
(v) Diagonal bisect angles.

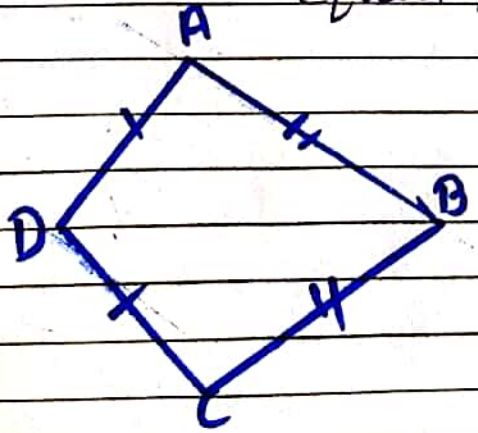
5. Traperium →

One pair of opposite sides of traperium parallel, i.e AB || DC



6. Kite →

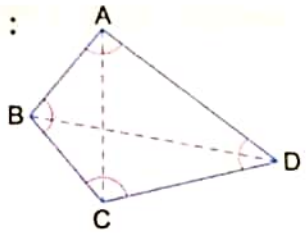
2 pairs of adjacent sides equal, i.e. AD = AB and DC = BC



Note: i. Write all ~~dd~~ notes in your note book.
ii. Do assignment 7.1 in your copy.

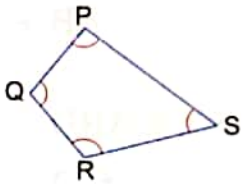
Scanned with CamScanner

2. Look at the adjoining figure of a □ABCD and name its following :
   (*i*) A pair of adjacent sides
   (*ii*) A pair of opposite sides
   (*iii*) A pair of adjacent angles
   (*iv*) A pair of opposite angles

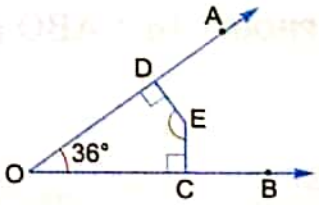


3. In the figure of Q. No 2, name the two diagonals of the quadrilateral ABCD.

4. Join Q and S in the adjoining figure and prove that $\angle P + \angle Q + \angle R + \angle S = 360°$.



5. The three angles of a quadrilateral are equal. If the measure of the fourth angle is 120°, what is the measure of each of the equal angles ?
6. Two angles of a quadrilateral are of measure 75° each and the other two angles are equal. What is the measure of either of these two equal angles ?
7. If three angles of a quadrilateral are 20°, 90° and 90°, find the fourth angle of the quadrilateral.
8. The measure of two adjacent angles of a quadrilateral are 85° and 115° and the other two angles are equal. Find the measure of each of equal angles.
9. Four angles of a quadrilateral are in the ratio 2 : 3 : 4 : 1. Find the angles.
10. The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4. What is the measure of the four angles separately ?
11. The four angles of a quadrilateral are in the ratio 3 : 5 : 7 : 9. Find the angles of the quadrilateral.
12. In the adjoining figure, E is a point in the interior of $\angle AOB$, such that $EC \perp OB$ and $ED \perp OA$. If $\angle AOB = 36°$, what is the measure of $\angle CED$?



13. The sum of two angles of a quadrilateral is 150° and the other angles are in the ratio 2 : 3. Find the measure of each angle.

Scanned with CamScanner