Parallelogram - 11

Identify the conditions that need to be satisfied for a quadrilateral to be a parallelogram.
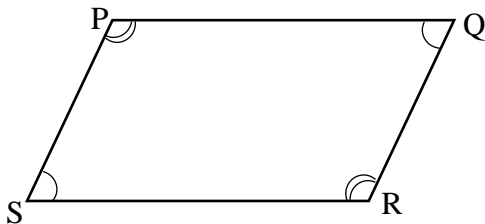
1. If the opposite sides of a quadrilateral are equal, then it is a parallelogram.
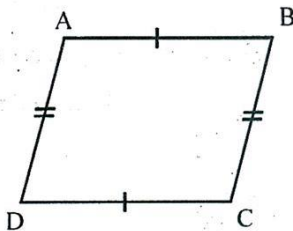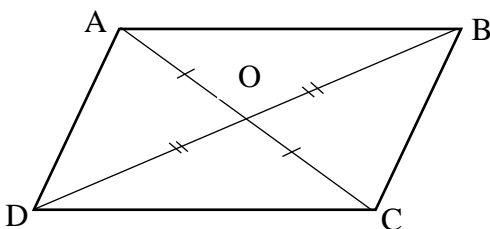

$$AB = DC$$
$$AD = BC$$

2. If the opposite angles of a quadrilateral are equal, then it is a parallelogram.

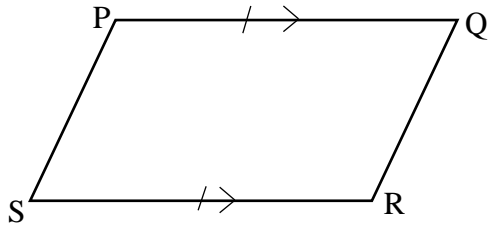$$P\hat{Q}R = P\hat{S}R$$
$$S\hat{P}Q = S\hat{R}Q$$

3. If the diagonals of a quadrilateral bisect each other, then it is a parallelogram.

$$AO = OC$$
$$DO = OB$$

4. In a quadrilateral, if a pair of opposite sides is equal and parallel, then the quadrilateral is a parallelogram.

$$PQ = SR$$
$$PQ \text{ // } SR$$

- Complete all the questions of the **Exercise 17.1 on pages 173,174,175** of the Mathematics Text Book

Parallelograms with special properties

Rectangle

(i) All the vertex angles are right angles.
(ii) The diagonals are equal in length.

Square

(i) All the sides are equal in length.
(ii) The diagonals bisect each other at right angles.
(iii) The angles at the vertices are bisected by the diagonals.

Rhombus

(i) All the sides are equal in length.
(ii) The diagonals bisect each other at right angles.
(iii) The angles at the vertices are bisected by the diagonals