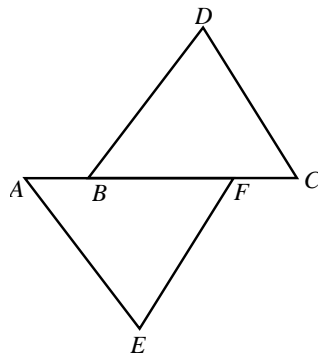# TRIANGLES
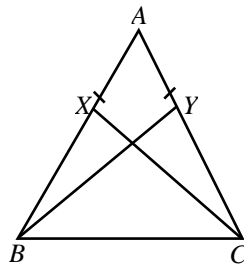
CRITERIA OF CONGRUENCE OF TRIANGLE

EXERCISE
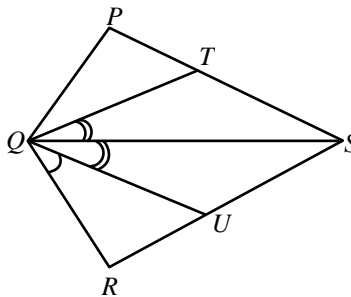
Q.1   Prove that diagonal of a parallelogram divides it into two congruent triangles.

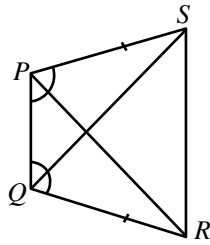**Q.2**   In Fig. it is given that AB = CF, EF = BD and ∠AFE = ∠DBC. Prove that ΔAFE ≅ ΔCBD.

Q.3   In Fig. X and Y are two points on equal sides AB and AC of a ΔABC such that AX = AY. Prove that XC = YB.

**Q.4**   In Fig. PQRS is a quadrilateral and T and U are respectively points on PS and RS such PQ = RQ, ∠PQT = ∠RQU and ∠TQS = ∠UQS. Prove that QT = QU.

Q.5   In Fig. PS = QR and ∠SPQ = ∠RQP. Prove that PR = QS and ∠QPR = ∠PQS.

Q.6   ΔABC is an isosceles triangle with AB = AC. Side BA is produced to D such that AB = AD. Prove that ∠BCD is a right angle.

Q.7   In Fig. AC = BC, ∠DCA = ∠ECB and ∠DBC = ∠EAC. Prove that triangles DBC and EAC are congruent, and hence DC = EC.
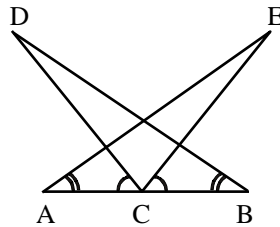
Q.8   If the altitudes from two vertices of a triangle to the opposite sides are equal, prove that the triangle is isosceles.

Q.9   In ΔABC, AB = AC and the bisectors of angles B and C intersect at point O. Prove that BO = CO and the ray AO is the bisector of angle BAC.

Q.10   In Fig. BM and DN are both perpendiculars to the segments AC and BM = DN. Prove that AC bisects BD.