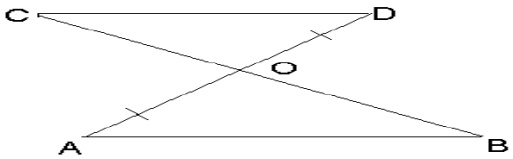
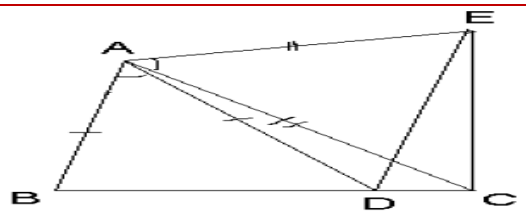
Comprehensive Test Series IX Chapter: Triangle and Lines and Angles

Q.1 Line segment AB is parallel to another line segment CD. O is the midpoint of AD Show that (i) ΔAOB ≅ ΔDOC (ii) O is also the midpoint of BC.

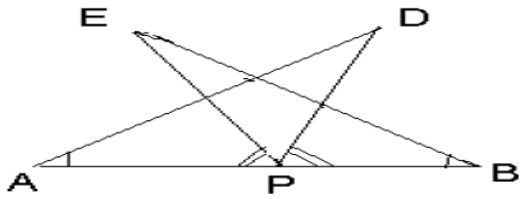


Q.2. Line l is the bisector of an angle ∠A and B is any point on l. BP and BQ are perpendiculars from B to the arms of ∠A. Show that (i) ΔAPB ≅ ΔAQB (ii) BP = BQ or B is equidistant from the arms of <A.

Q.3 In Fig. AC = AE, AB = AD and ∠BAD = ∠EAC. Show that BC = DE.



Q.4. AB is a line segment and P is its mid-point. D and E are points on the same side of AB such that ∠BAD = ∠ABE and ∠EPA = ∠DPB. Show that (i) Δ DAP ≅ Δ EBP (ii) AB = BE

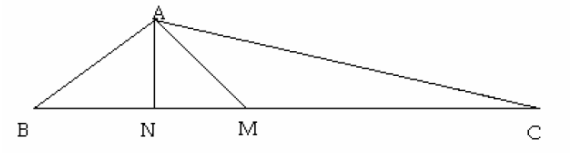


Q. 5. In right triangle ABC, right angled at C, M is the mid-point of hypotenuse AB. C is joined to M and produced to a point D such that DM = CM. Point D is joined to point B. Show that
(i) ΔAMC ≅ ΔBMD (ii) ∠DBC is a right angle
(iii) Δ DBC ≅ ΔACB (iv) CM = AB

Q . 6. In Δ ABC, the bisectors of ∠B and ∠C intersect each other at a point 0. Prove that ∠BOC = 90° + ½∠A.

Q. 7 In _ ABC, the sides AB and AC are produced to P and Q respectively. Bisectors of ∠PBC and ∠QCB intersect at point 0. Prove that ∠BOC = 90° - ½∠A.

Q. 8. In _ ABC, ∠B >∠C. If AM is the bisector of ∠BAC and AN ⊥ BC, prove that ∠MAN = ½(∠B - ∠C)



Q.9. O is a point in the interior of Δ ABC, prove AB + AC > OB + OC

Q.10. AD is a median to side BC of Δ ABC. Prove that AB + AC > 2 AD.

Q.11. Show that the difference between any two sides of a triangle is less than the third side.
OR, In ΔABC, if AD is the bisector of <A , show that AB > BD.

Q.12. Δ ABC is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB. Show that BCD is a right angle.

Q.13. In a right triangle if one of the acute angle is double the other then prove that Hypogenous is double the smallest side.