Advanced_Grade-9_Triangles
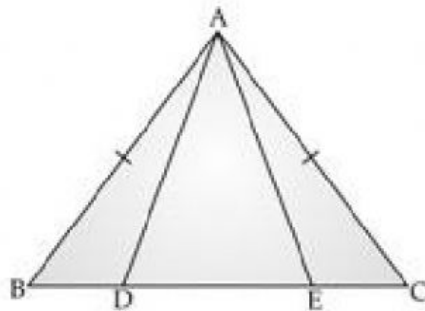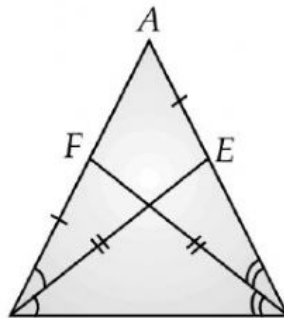
Properties of Triangles

1. In an isosceles triangle ABC with AB = AC, D and E are points on BC such that BE = CD (as given figure). Show that AD = AE

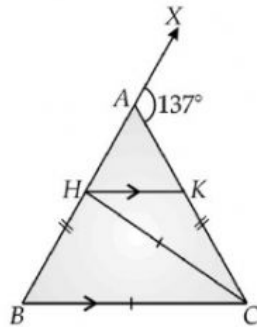2. In the given figure, AB = AC and BE and CF are bisectors of ∠B and ∠C respectively. Prove that ΔEBC ≅ ΔFCB.

3. Two sides AB and BC and median AM of one triangle AABC are respectively equal to sides PQ and QR and median PN of APQR. Show that
    (i)   ΔABM ≅ ΔPQN
    (ii)   ΔABC ≅ ΔPOR

4. In figure, AB = AC, CH = CB and HK||BC. If ∠CAX = 137°, then find ∠CHK.

5. ABC and DBC are two isosceles triangles on the same base BC and vertices A and D on the same side of BC. AD is extended to intersect BC at P, show that:

   (i)   ΔABD ≅ ΔACD

   (ii)   AP is perpendicular bisector of BC.

6. In the given figure, ABCD and BPQ are straight lines. If BP = BC and DQ is parallel to CP prove that:

   (i)   CP = CD

   (ii)   DP bisects ∠CDQ

   1.
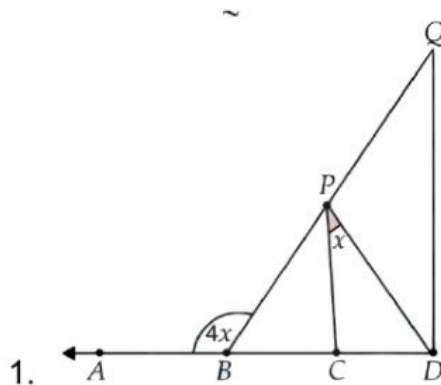
7. ABCD is a square and ABE is an equilateral triangle outside the square prove that ∠ACE = $\frac{1}{2}$∠ABE

8. In figure, OA = OD and ∠1 = ∠2. Prove that ∆OCB is an isosceles triangle.