9 Class Math Tuition Assignment

Assignment – 7

Assigned To = All 9 Class Students

Chapter = Triangles

Submission Date = 06 November 2022 **MM = 30**

Q1. 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 (see Fig. 7.23). Show that:

(i) ΔAMC ≅ ΔBMD

(ii) ∠DBC is a right angle.

(iii) ΔDBC ≅ ΔACB

(iv) CM = ½ AB

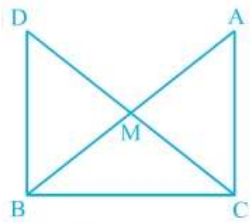


Fig. 7.23

Q2. ΔABC is an isosceles triangle in which AB = AC. Side BA is produced to D such that AD = AB (see Fig. 7.34). Show that ∠BCD is a right angle.

9 Class Math Tuition Assignment

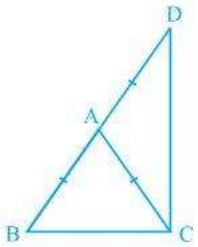
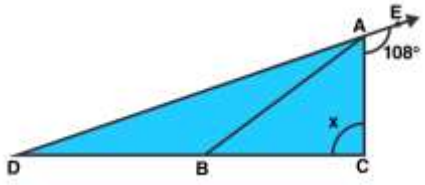


Fig. 7.34

Q3. **In figure, AB divides ∠DAC in the ratio 1 : 3 and AB = DB. Determine the value of x.**

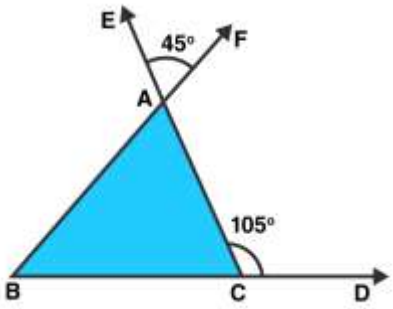


Q4. **In a △ABC, the internal bisectors of ∠B and ∠C meet at P and the external bisectors of ∠B and ∠C meet at Q. Prove that ∠BPC + ∠BQC = 180°.**

Q5. **If one angle of a triangle is equal to the sum of the other two, show that the triangle is a right angle triangle.**

Q6. **Two angles of a triangle are equal and the third angle is greater than each of those angles by 30°. Determine all the angles of the triangle.**

Q7. **In figure, the sides BC, CA and AB of a △ABC have been produced to D, E and F respectively. If ∠ACD = 105° and ∠EAF = 45°, find all the angles of the △ABC.**



Q8. **Show that the angles of an equilateral triangle are 60° each.**

Q9. ΔABC and ΔDBC are two isosceles triangles on the same base BC and vertices A and D are on the same side of BC (see Fig. 7.39). If AD is extended to intersect BC at P, show that

(i) ΔABD ≅ ΔACD

(ii) ΔABP ≅ ΔACP

(iii) AP bisects ∠A as well as ∠D.

(iv) AP is the perpendicular bisector of BC.

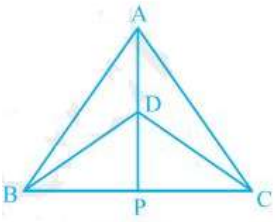


Fig. 7.39

Q10. Two sides AB and BC and median AM of one triangle ABC are respectively equal to sides PQ and QR and median PN of ΔPQR (see Fig. 7.40). Show that:

(i) ΔABM ≅ ΔPQN

(ii) ΔABC ≅ ΔPQR

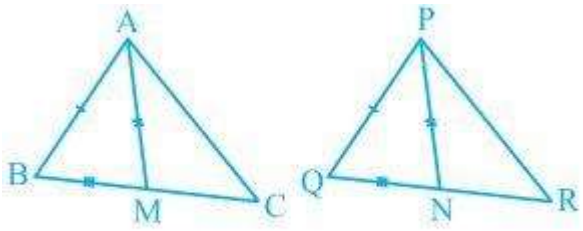


Fig. 7.40

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