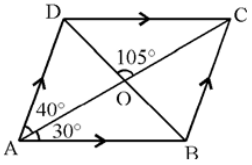
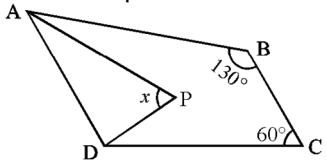
QUADRILATERALS CM090801

Multiple Choice Questions : **1 mark each**

1. If the angles of a quadrilateral ABCD, taken in order are in ratio 3 : 7 : 6 : 4, then ABCD is a :
   (a) rhombus (b) kite (c) parallelogram (d) trapezium
2. 

   ABCD is a parallelogram in which ∠DAC = 40°, ∠BAC = 30°, ∠DOC = 105°, then ∠CDO equals :
   (a) 75° (b) 70° (c) 45° (d) 85°
3. In quadrilateral ABCD, AB = BC & CD = DA, then the quadrilateral is a :
   (a) parallelogram (b) rhombus (c) kite (d) trapezium
4. All the angles of a convex quadrilateral are congruent. However not all its sides are congruent. What type of quadrilateral is it?
   (a) parallelogram (b) square (c) rectangle (d) trapezium
5. ABCD is a quadrilateral and AP and DP are bisectors of ∠A and ∠D. The value of x is :


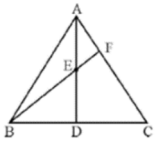
   (a) 60° (b) 85° (c) 95° (d) 100°

Very Short Answer Type Questions : **2 marks each**

6. In ΔABC, AD is the median. A line through D and parallel to AB, meets AC at E. Prove that BE is the median of triangle ABC.
7. ABCD is a quadrilateral in which P, Q, R and S are mid points of AB, BC, CD and DA respectively. Show that PQRS is a parallelogram.
8. The angles of a quadrilateral are in the ratio 3 : 5 : 7 : 9. Find the angles of the quadrilateral.

Short Answer Type Questions : **3 marks each**

9. AD is the median of ΔABC. E is the midpoint of AD. BE produced meets AC at F. Show that $AF = \frac{1}{3}AC$.



10. Show that if the diagonals of a quadrilateral bisect each other at right angles, then it is a rhombus.
11. ABCD is a rectangle in which diagonal AC bisects ∠A as well as ∠C. Show that :
    (i) ABCD is a square (ii) Diagonal BD bisects ∠B as well as ∠D.

Long Answer Type Questions : **5 marks each**

12. ABC is a triangle right angled at C. A line through the mid-point M of hypotenuse AB and parallel to BC intersects AC at D. Show that :
    (i) MD ⊥ AC (ii) D is mid-point of AC (iii) MC = MA = $\frac{1}{2}$ AB.
13. ABCD is a trapezium in which AB || CD and AD = BC. Show that :
    (i) ∠A = ∠B
    (ii) ∠C = ∠D
    (iii) ΔABC ≅ ΔBAD
    (iv) Diagonal AC = diagonal BD.