

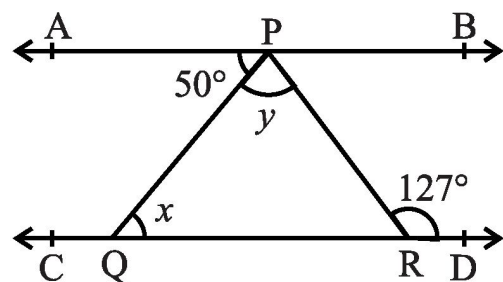
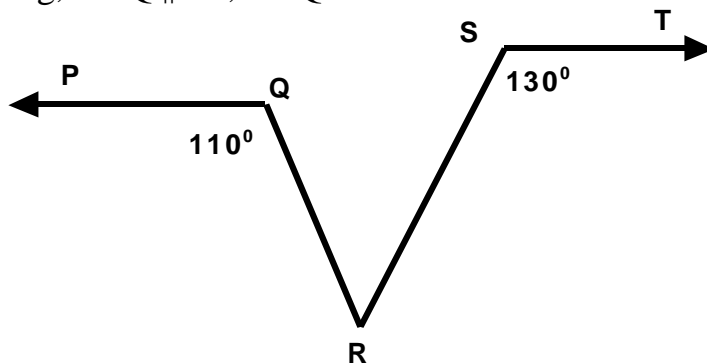
**REVISION TEST 04 (GEOMETRY)**  
**CLASS: IX : MATHEMATICS**

M.M. 40 Marks

T.T. 1 hr 15 min

**SECTION – A(2 marks each)**

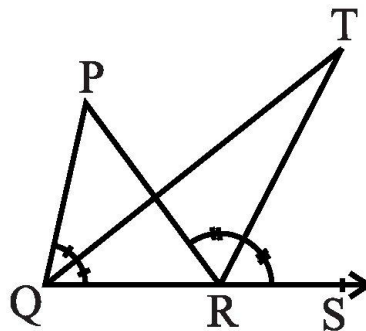
1. If a point C lies between two points A and B such that  $AC = BC$ , then prove that  $AC = \frac{1}{2}AB$ . Explain by drawing the figure.
2. Show that in a right angled triangle, the hypotenuse is the longest side.
3. ABC is a right angled triangle in which  $\angle A = 90^\circ$  and  $AB = AC$ . Find  $\angle B$  and  $\angle C$ .
4. In fig, if  $PQ \parallel ST$ ,  $\angle PQR = 110^\circ$  and  $\angle RST = 130^\circ$  then find the value of  $\angle QRS$ .



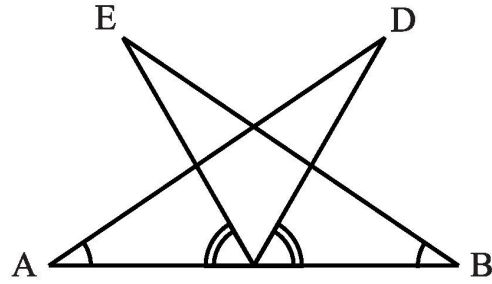
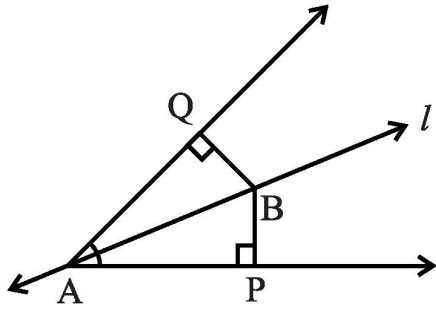
5. In the above right sided figure, if  $AB \parallel CD$ ,  $\angle APQ = 50^\circ$  and  $\angle PRD = 127^\circ$ , find  $x$  and  $y$ .

**SECTION – B(3 marks each)**

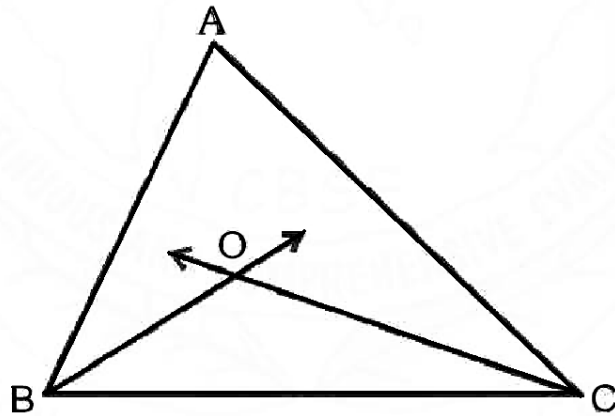
6. In the above right sided figure, the side QR of  $\triangle PQR$  is produced to a point S. If the bisectors of  $\angle PQR$  and  $\angle PRS$  meet at point T, then prove that  $\angle QTR = \frac{1}{2} \angle QPR$ .



7. If two sides of a triangle are unequal, prove that the longer side has the greater angle opposite to it.
8. Prove that “Angles opposite to equal sides of a triangle are equal”.
9. Line  $l$  is the bisector of an angle  $\angle A$  and B is any point on  $l$ . BP and BQ are perpendiculars from B to the arms of  $\angle A$  (see the above side figure). Show that: (i)  $\triangle APB \cong \triangle AQB$  (ii)  $BP = BQ$  or B is equidistant from the arms of  $\angle A$ .

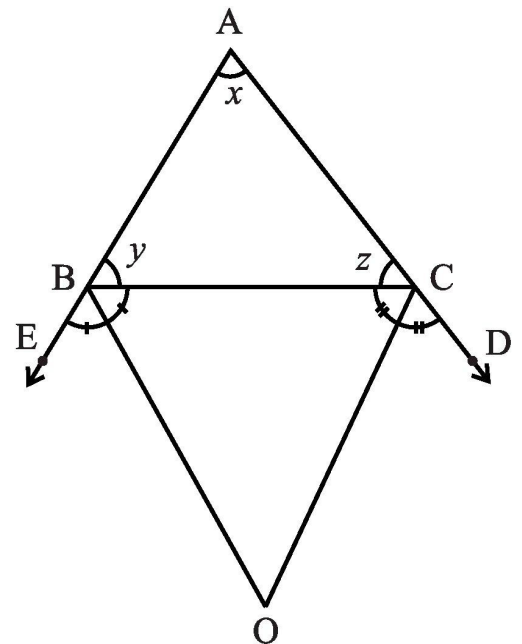


10. AB is a line segment and P is its mid-point. D and E are points on the same side of AB such that  $\angle BAD = \angle ABE$  and  $\angle EPA = \angle DPB$  (see the above right sided figure). Show that (i)  $\triangle DAP \cong \triangle EBP$  (ii)  $AD = BE$
11. Bisectors of angles B and C of a triangle ABC intersect each other at the point O(see above right sided figure). Prove that  $\angle BOC = 90^\circ + \frac{1}{2} \angle A$ .



**SECTION – C(4 marks each)**

12. In the figure, the sides AB and AC of a triangle ABC are produced to points E and D respectively. If bisectors BO and CO of  $\angle CBE$  and  $\angle BCD$  respectively meet at point O, then prove that  $\angle BOC = 90^\circ - \frac{1}{2} \angle BAC$ .



13. If in two right triangles, hypotenuse and one side of a triangle are equal to the hypotenuse and one side of other triangle, prove that the two triangles are congruent
14. Show that the sum of three altitudes of a triangle is less than the sum of the three sides of the triangle.

