

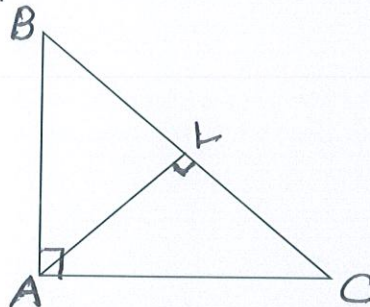
# INTERNATIONAL INDIAN SCHOOL, RIYADH

## Mathematics Work Sheet 2017-2018

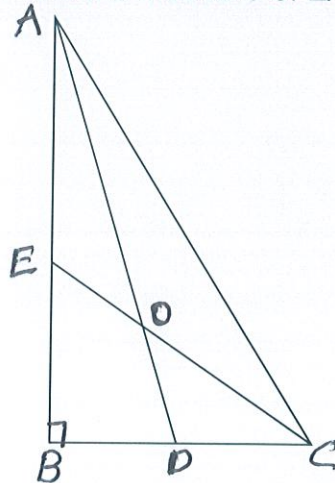
Ch -7 Triangles

Class - IX

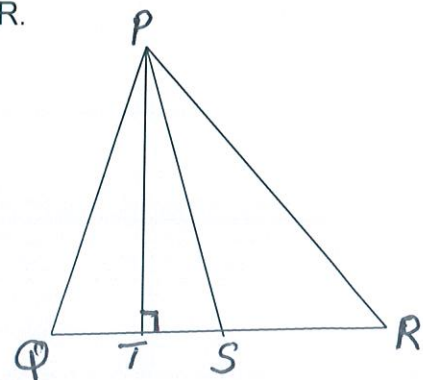
- 1 In the given fig,  $\Delta ABC$  is right angled at A and  $AL \perp BC$ . Prove that  $\angle BAL = \angle ACB$ .



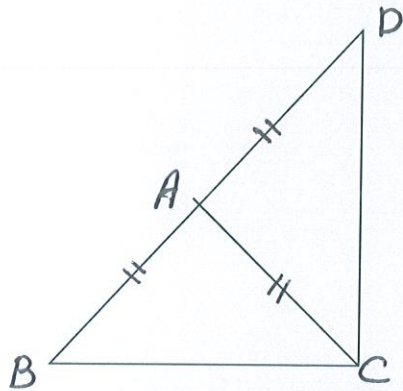
- 2 In the fig, AD & CE are the angle bisectors of  $\angle A$  &  $\angle C$  respectively of  $\Delta ABC$  meeting at O. If  $\angle B = 90^\circ$  find the measure of  $\angle AOC$ .



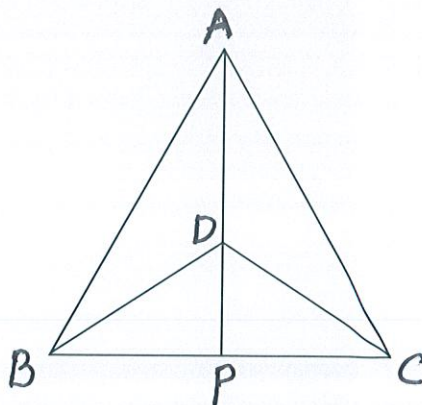
- 3 In the given fig, PS is the bisector of  $\angle QPR$  and  $PT \perp QR$ . Show that  $\angle TPS = \frac{1}{2}(\angle Q - \angle R)$ .



- 4 Prove that the sum of the lengths of three altitudes of a triangle is less than the sum of the lengths of three sides of the triangle.
- 5 In  $\triangle PQR$ ,  $PQ = PR$  and  $S$  is any point on the side  $PR$ . Prove that  $RS \perp QS$ .
- 6 In the given fig,  $\triangle ABC$  is an isosceles triangle in which  $AB=AC$ . Side  $BA$  is produced to  $D$  such that  $BA=AD$ . Show that  $\angle BCD$  is a right angle.

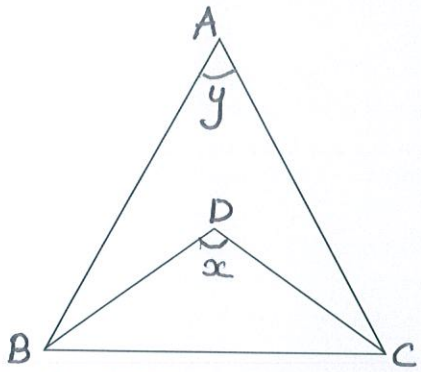


- 7 In the fig,  $\triangle ABC$  &  $\triangle DBC$  are two isosceles triangles on the same base  $BC$  and the vertices  $A$  &  $D$  are on the same side of  $BC$ .  $AD$  when extended meets  $BC$  at  $P$ . show that (i)  $\triangle ABD \cong \triangle ACD$  (ii)  $\triangle ABP \cong \triangle ACP$  (iii)  $AP$  bisects  $\angle A$  as well as  $\angle D$ .

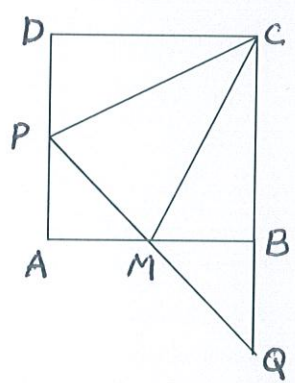


- 8  $D$  is any point on the side  $BC$  of  $\triangle ABC$ . prove that  $AB+BC+CA > 2AD$ .
- 9  $ABCD$  is a square.  $X$  &  $Y$  are points on the sides  $AD$  and  $BC$  respectively such that  $AY=BX$ . Prove that
- (i)  $BY = AX$  (ii)  $\angle BAY = \angle ABX$ .

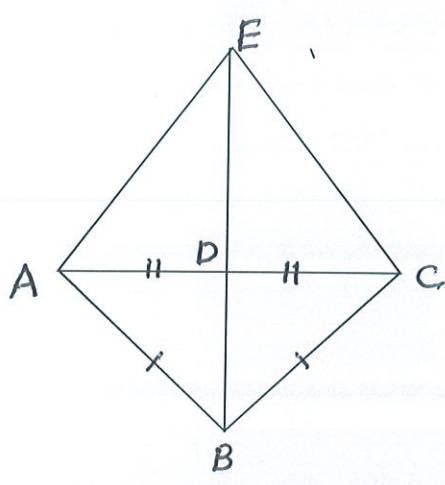
- 10 In the fig; in  $\triangle ABC$ ,  $BD$  and  $CD$  are bisectors of  $\angle B$  &  $\angle C$  respectively. Prove that  $2x - y = 180^\circ$ .



- 11 In the fig, ABCD is a square and M is the midpoint of AB.  $CM \perp PQ$  meets AD at P and CB produced at Q. prove that  $PA = BQ$ .

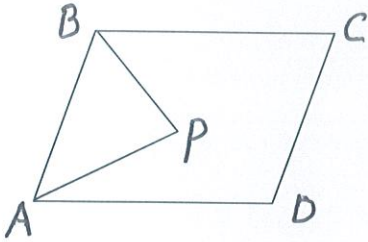


- 12 In the fig,  $AB=BC$  and  $AD=CD$ . Prove that  $BE$  is perpendicular to  $AC$  and  $AE = EC$ .

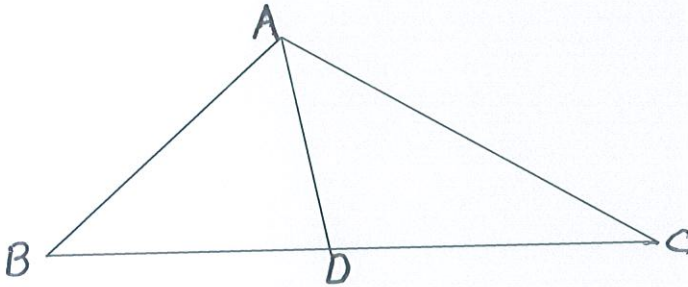




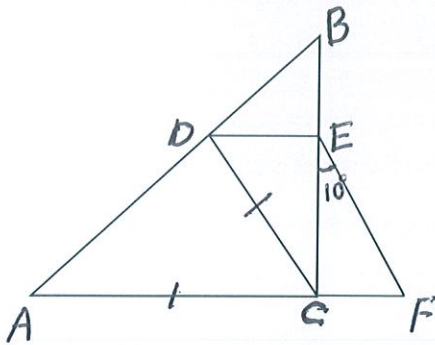
- 13 In the fig, ABCD is a quadrilateral. AP & BP are bisectors of  $\angle A$  &  $\angle B$ . Prove that  $2\angle APB = \angle C + \angle D$ .



- 14 In the fig,  $AC > AB$  and AD is the bisector of  $\angle A$ . Show that  $\angle ADC > \angle ADB$ .



- 15 In the Fig,  $\angle ACB = 90^\circ$  and  $AC = CD$ . Given CDEF is a parallelogram and  $\angle FEC = 10^\circ$ . Calculate  $\angle BDE$ .



Prepared by  
IX-X Girls section.