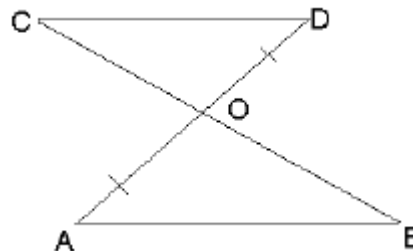


JSUNIL TUTORIAL PUNJABI COLONY GALI NO. 01

9th Triangle

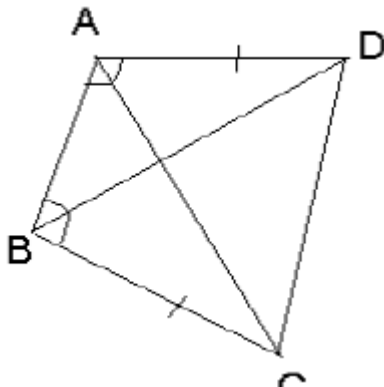
1. In $\triangle ABC$, $AB = 4\text{cm}$ and $BC = 5\text{cm}$. Find the greatest angle.
 2. In $\triangle ABC$, if AD is the bisector of $\angle A$, show that $AB > BD$.
 3. O is a point in the interior of $\triangle ABC$, prove $AB + AC > OB + OC$
 4. AD is a median to side BC of $\triangle ABC$. Prove that $AB + AC > 2 AD$.
 5. Show that the difference between any two sides of a triangle is less than the third side.
 6. In $\triangle ABC$ $AP \perp QR$ show $AR > AQ$
- Q.1 Line segment AB is parallel to another line segment CD . O is the mid point of AD Show that



(i) $\triangle AOB \cong \triangle DOC$ (ii) O is also the mid point of BC .

Q. 2 $ABCD$ is a quadrilateral in which $AD = BC$ and $\angle DAB = \angle CBA$. Prove that

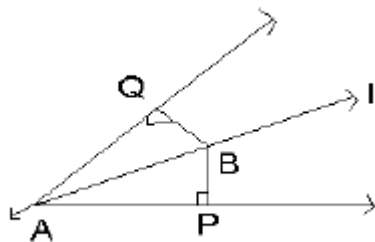
- (i) $\triangle ABD \cong \triangle BAC$
- (ii) $BD = AC$
- (iii) $\angle ABD = \angle BAC$.



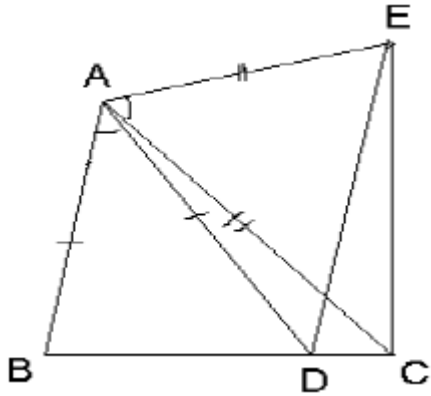
Q. 3 Line l is the bisector of an angle $\angle A$ and B is any point on l . BP and BQ are perpendiculars from B

to the arms of $\angle A$. Show that

- (i) $\triangle APB \cong \triangle AQB$
- (ii) $BP = BQ$ or B is equidistant from the arms of $\angle A$.



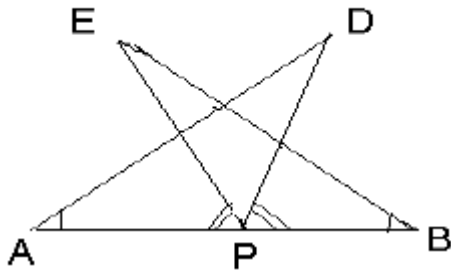
Q.4 $AC = AE$, $AB = AD$ and $\angle BAD = \angle EAC$. Show that $BC = DE$.



Q.5 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 $\angle EPA = \angle DPB$. Show that

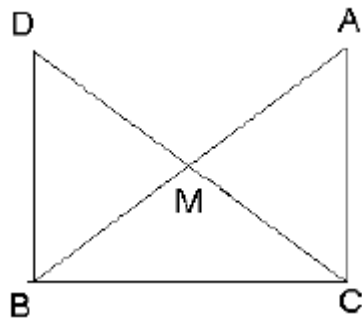
- (i) $\triangle DAP \cong \triangle EBP$
- (ii) $AB = BE$



Q. 6 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 . Show that

- (i) $\triangle AMC \cong \triangle BMD$
- (ii) $\angle DBC$ is a right angle
- (iii) $\triangle DBC \cong \triangle ACB$
- (iv) $CM = \frac{1}{2} AB$



Q. 7. If in a triangle ABC , the bisectors of the angles ABC and ACB meet at M , prove that

$$\angle BMC = 90^\circ + \frac{1}{2} \angle A.$$