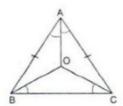


Exercise 5A

Question 21:

Given: A  $\triangle$ ABC in which AB = AC,BO and CO are bisectors of  $\angle$ B and  $\angle$ C



To Pr ove: In ΔBOC, we have,

$$\angle OBC = \frac{1}{2} \angle B$$

and, 
$$\angle OCB = \frac{1}{2} \angle C$$

But, 
$$\angle B = \angle C$$
 [ :: AB= AC (given)]

Since base angles are equal, sides are equal

$$\Rightarrow$$
 OB = OC ....(1)

Since OB and OC are the bisectors of angles,

∠B and ∠C respectively, we have

$$\angle ABO = \frac{1}{2} \angle B$$

$$\angle ACO = \frac{1}{2} \angle C$$

Now, in ∆ABO and ∆ACO

$$\angle ABO = \angle ACO$$
 [from (2)]

$$BO = OC$$
 [from (1)]

Thus, by Side-Angle-Side criterion of congruence, we have

$$\triangle ABO \cong \triangle ACO$$
 [By SAS]

The corresponding parts of the congruent triangles are equal

i.e. AO bisects ZA.

\*\*\*\*\*\*\* END \*\*\*\*\*\*\*