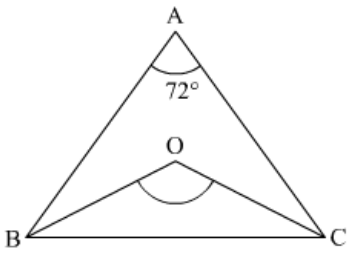
Triangles and Its Angles Ex 9.1 Q7

Answer :



Since OB and OC are the angle bisector of $\angle B$ and $\angle C$

$\angle B = 2\angle OBC \ \angle C = 2\angle OCB$

$\angle A + \angle B + \angle C = 180^\circ$

$\Rightarrow 72^\circ + 2\angle OBC + 2\angle OCB = 180^\circ$

[Sum of the three angles of a triangle is 180°]

$\Rightarrow 2(\angle OBC + \angle OCB) = 108^\circ$

$\Rightarrow \angle OBC + \angle OCB = 54^\circ$

$\Rightarrow 180^\circ - \angle BOC = 54^\circ$ [Since, $\angle OBC + \angle OCB + \angle BOC = 180^\circ$]

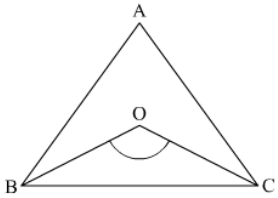
$\Rightarrow \angle BOC = 126^\circ$

Hence magnitude of $\angle BOC$ is 126°.

Triangles and Its Angles Ex 9.1 Q8

Answer :

Let ABC be a triangle and BO and CO be the bisectors of the base angle $\angle ABC$ and $\angle ACB$ respectively.



We know that if the bisectors of angles $\angle ABC$ and $\angle ACB$ of a triangle ABC meet at a point O, then $\angle BOC = 90^\circ + 12\angle A$

From the above relation it is very clear that if $\angle BOC$ is equals 90° then $\angle A$ must be equal to zero.

Now, if possible let $\angle A$ is equals zero but on other hand it represents that A, B, C will be collinear, that is they do not form a triangle.

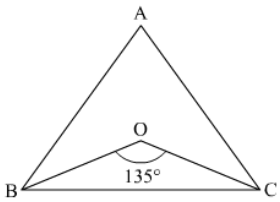
It leads to a contradiction.

Hence, the bisectors of base angles of a triangle cannot enclose a right angle in any case.

Triangles and Its Angles Ex 9.1 Q9

Answer :

Let ABC be a triangle and Let BO and CO be the bisectors of the base angle $\angle ABC$ and $\angle ACB$ respectively.



We know that if the bisectors of angles $\angle ABC$ and $\angle ACB$ of a triangle ABC meet at a point O, then

$\angle BOC=90°+12\angle A$

$\therefore 135°=90°+12\angle A \Rightarrow 45°=12\angle A \Rightarrow \angle A=90°$

Hence the triangle is a right angled triangle.

********** END **********