Properties of Triangles Ex 15.3 Q1

Answer :

(i) The interior angle adjacent to exterior $\angle CBX$ is $\angle ABC$.
(ii) The interior angles opposite to exterior $\angle CBX$ are $\angle BAC$ and $\angle ACB$.
Also, the interior angles opposite to exterior $\angle BAY$ are $\angle ABC$ and $\angle ACB$.

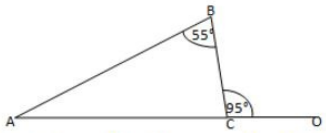
Properties of Triangles Ex 15.3 Q2

Answer :

In $\triangle ABC$, $\angle A = 50^\circ$ and $\angle B = 55^\circ$.
Because of the angle sum property of the triangle, we can say that :
$\angle A + \angle B + \angle C = 180^\circ$
$\Rightarrow 50^\circ + 55^\circ + \angle C = 180^\circ$
Or,
$\angle C = 75^\circ$
i.e. $\angle ACB = 75^\circ$
$\angle ACX = 180^\circ - \angle ACB = 180^\circ - 75^\circ = 105^\circ$ (Linear pair)

Properties of Triangles Ex 15.3 Q3

Answer :



We know that the sum of interior opposite angles is equal to the exterior angle.
Hence, for the given triangle, we can say that :
$\angle ABC + \angle BAC = \angle BCO$
$\Rightarrow 55^\circ + \angle BAC = 95^\circ$
Or,
$\angle BAC = 95^\circ - 55^\circ$
$= \angle \mathbf{BAC = 40^\circ}$
We also know that the sum of all angles of a triangle is 180°.
Hence, for the given $\triangle ABC$, we can say that :
$\angle ABC + \angle BAC + \angle BCA = 180^\circ$
$\Rightarrow 55^\circ + 40^\circ + \angle BCA = 180^\circ$
Or,
$\angle BCA = 180^\circ - 95^\circ$
$= \mathbf{\angle BCA = 85^\circ}$

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