Circles Ex 16.4 Q1

Answer :

It is given that O is the circle and $\angle APB = 50°$

Fig

We have to find $\angle AOB$ and $\angle OAB$

According to the figure O is center of the circle.

$\angle AOB = 2\angle APB$ [The angle subtended by an arc of a circle at the centre is double the angle subtended by it at any point on the remaining part of the circle.]

$$\therefore \angle AOB = 2 \times 50^\circ \quad [\because \angle APB = 50^\circ]$$
$$= 100^\circ$$

In ΔAOB

$AO = BO$ (Radii of the same circle)

Then, $\angle OAB = \angle OBA$ [Angles equal to opposite sides are equal]

$\angle OAB + \angle ABO + \angle BOA = 180^\circ$ [Angle sum property]

$\Rightarrow \angle OAB + \angle ABO = 180^\circ - 100^\circ$

$\Rightarrow 2\angle OAB = 80^\circ$

$\Rightarrow \angle OAB = 40^\circ$

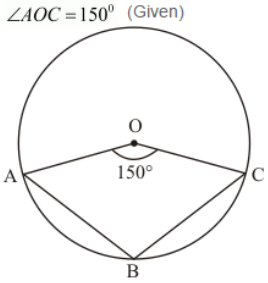
Hence, $\angle AOB = 100°$ and $\angle OAB = 40°$.

Circles Ex 16.4 Q2

Answer :

It is given that O is the centre of circle and A, B and C are points on circumference

$\angle AOC = 150^0$ (Given)



We have to find $\angle ABC$

The angle subtended by an arc of a circle at the centre is double the angle subtended by it at any point on the remaining part of the circle.

∠ABC=12reflex ∠AOC=12360°-150°=12×210°=105°

Hence, $\boxed{\angle ABC = 105^0}$

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