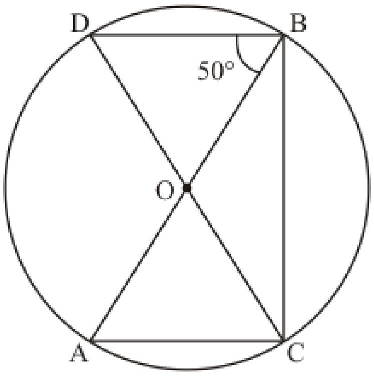
Circles Ex 16.5 Q7

Answer :

It is given that, AB and CD are diameter with center O and $\angle OBD = 50^0$



We have to find $\angle AOC$

Construction: Meet the point A and D to form line AD

Clearly arc AD subs tends $\angle ABD = 50^0$ at B and $\angle AOD$ at the center

Therefore $\angle AOD = 2\angle ABD = 180^0$ ...... (1)

Since CD is a straight line then

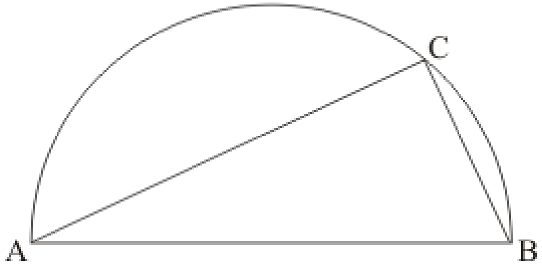
$$\angle DOC + \angle AOC = 180^0$$
$$\angle AOC = 180^0 - 100^0 \text{ (From equation (1))}$$
$$= 80^0$$

Hence $\boxed{\angle AOC = 80^0}$

Circles Ex 16.5 Q8

Answer :

It is given that, AB as diameter, O is center and $\angle CAB = 30^0$



We have to find $m\angle ACB$ and $m\angle ABC$

Since angle in a semi-circle is a right angle therefore

$\angle ACB = 90^0$

In ΔACD we have

$\angle CAB = 30^0$ (Given)

$\angle ACB = 90^0$ (Angle in semi-circle is right angle)

Now in ΔACB we have

$$\angle CAB + \angle ACB + \angle ABC = 180^0$$

$$\angle ABC = 180^0 - (\angle CAB + \angle CAB)$$

$$= 180^0 - (90^0 + 30^0)$$

$$= 180^0 - 120^0$$

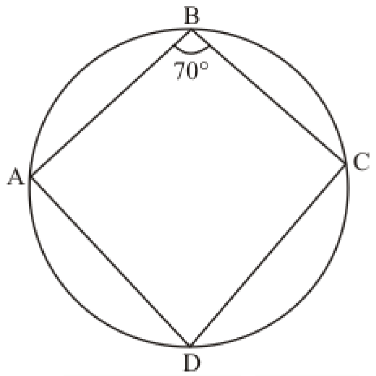
$$= 60^0$$

Hence $\boxed{\angle ABC = 60^0}$ and $\boxed{\angle ACB = 90^0}$

Circles Ex 16.5 Q9

Answer :

It is given that, $ABCD$ is a cyclic quadrilateral such that AB || CD and $\angle B = 70^0$



Now $\angle B + \angle D = 180^0$ ($\angle B = 70^0$ given)

So $\angle D = 110^0$

Also AB || CD and BC transversal

So

$$\angle B + \angle C = 180^0$$

$$\angle C = 180^0 - 70^0$$

$$= \boxed{110^0}$$

Now

$$\angle A + \angle C = 180^0$$

$$\begin{aligned}\angle A &= 180^0 - \angle C \\ &= 180^0 - 110^0 \quad \text{(Since } \angle C = 110^0 \text{)} \\ &= \boxed{70^0}\end{aligned}$$

$$\angle D = 180^0 - 70^0$$

$$\angle D = \boxed{110^0}$$

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