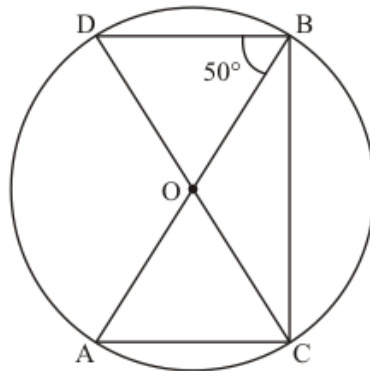




Circles Ex 16.5 Q7

Answer :

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



We have to find $\angle AOC$

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

Clearly arc AD subtends $\angle ABD = 50^\circ$ at B and $\angle AOD$ at the center

Therefore $\angle AOD = 2\angle ABD = 100^\circ$ (1)

Since CD is a straight line then

$$\angle DOC + \angle AOC = 180^\circ$$

$$\angle AOC = 180^\circ - 100^\circ \text{ (From equation (1))}$$

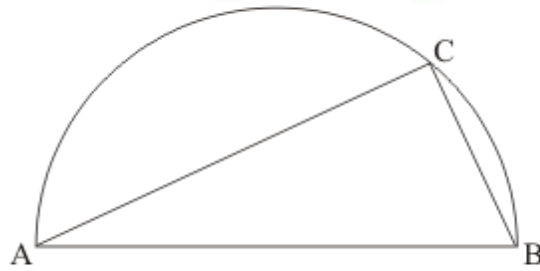
$$= 80^\circ$$

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

Circles Ex 16.5 Q8

Answer :

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



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

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

$$\angle ACB = 90^\circ$$

In $\triangle ACD$ we have

$$\angle CAB = 30^\circ \text{ (Given)}$$

$$\angle ACB = 90^\circ \text{ (Angle in semi-circle is right angle)}$$

Now in $\triangle ACB$ we have

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

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

$$= 180^\circ - (90^\circ + 30^\circ)$$

$$= 180^\circ - 120^\circ$$

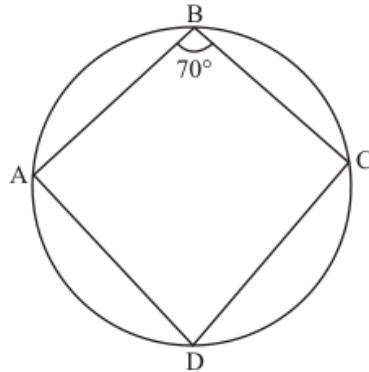
$$= 60^\circ$$

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

Circles Ex 16.5 Q9

Answer :

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



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

$$\text{So } \angle D = 110^\circ$$

Also $AB \parallel CD$ and BC transversal

So

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

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

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

Now

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

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

$$= 180^0 - 110^0$$

$$= \boxed{70^0}$$

(Since $\angle C = 110^0$)

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

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

***** END *****