Quick Maths

NCERT 9th - Circles

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Quick Maths

Question

A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc and also at a point on the major arc.

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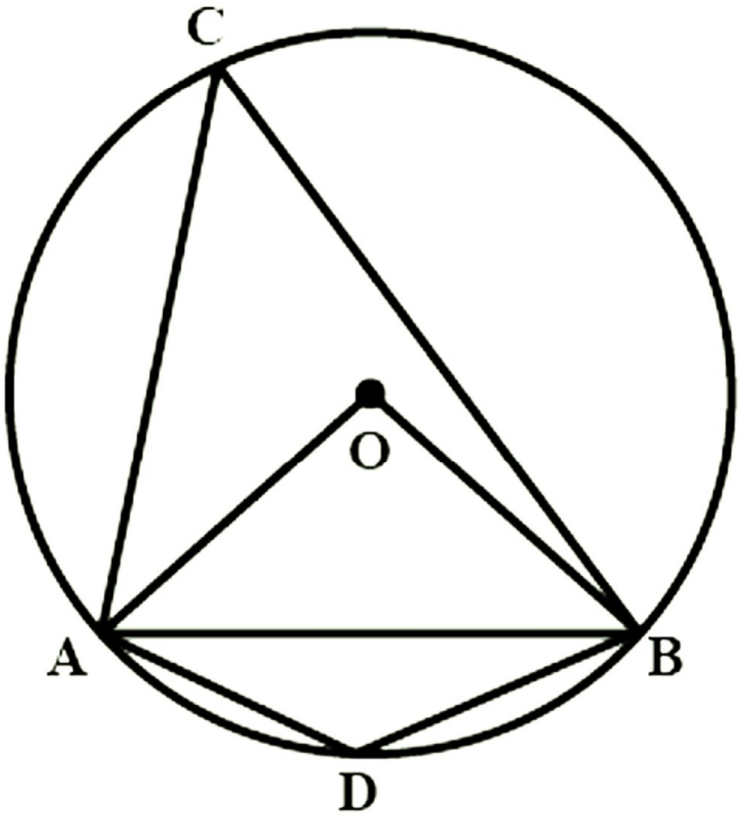
The figure



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Given,

AB is equal to the radius of the circle.

In $\triangle OAB$,

OA = OB = AB = radius of the circle.

Thus, $\triangle OAB$ is an equilateral triangle.

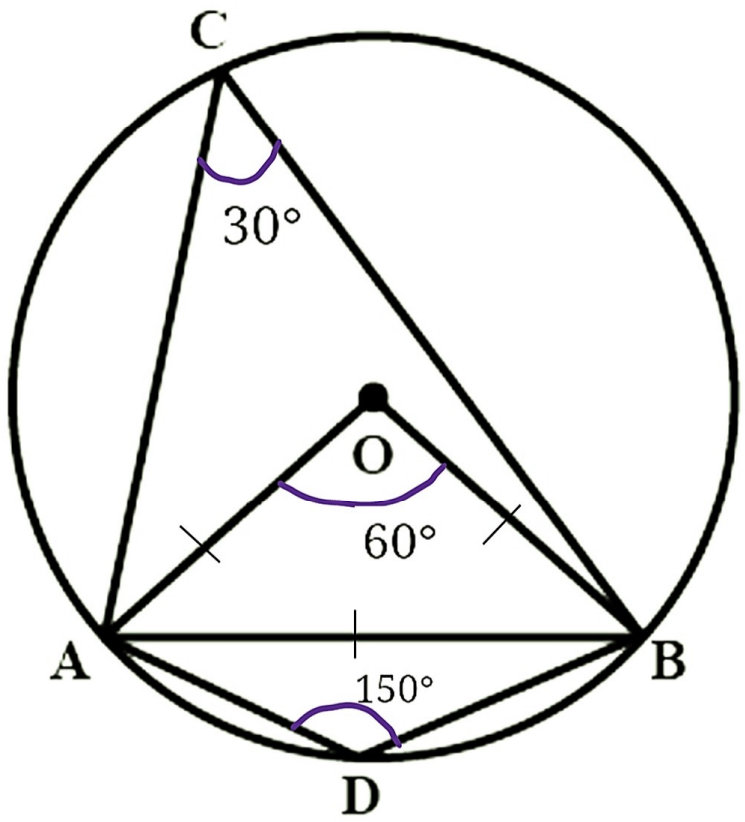
and $\angle AOB = 60°$.

Also, $\angle ACB = \frac{1}{2}\angle AOB = \frac{1}{2} \times 60° = 30°$.

Since, ACBD is a cyclic quadrilateral,

$\angle ACB + \angle ADB = 180°$ ....[Opposite angles of cyclic quadrilateral are supplementary]

$\Rightarrow \angle ADB = 180° - 30° = 150°$.



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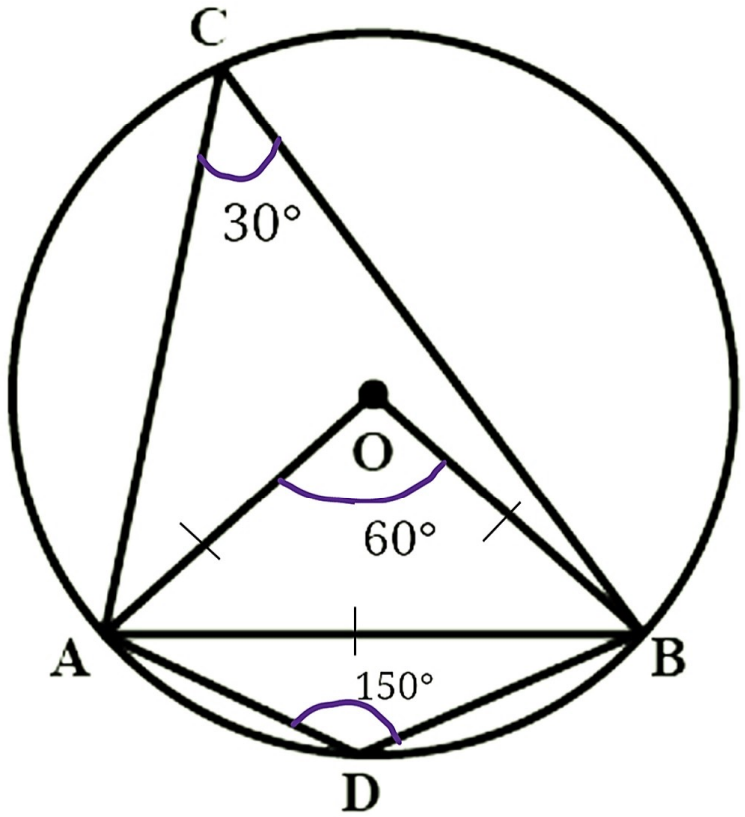
Thus, angle subtend by the chord at a point on the minor arc and also at a point on the major arc are 150° and 30°, respectively.



Thank you!

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