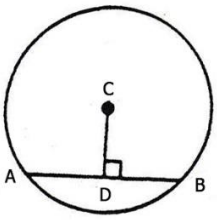
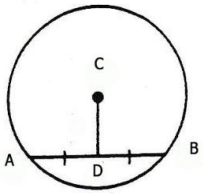
Circle geometry:

Secant line and Chord properties of a circle with the center C:

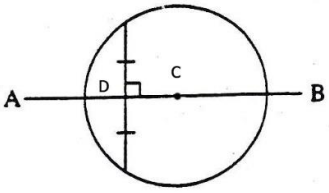
A perpendicular line from C bisects the chord: AD = DB



A radius bisecting a chord at D is perpendicular to it: <CDA = 90°

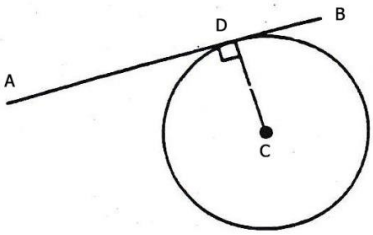


A line perpendicular bisector to any chord passes through C

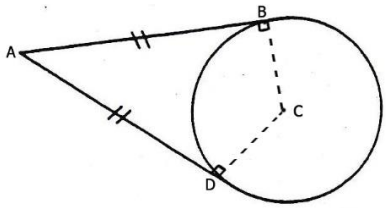


Tangent line Properties:

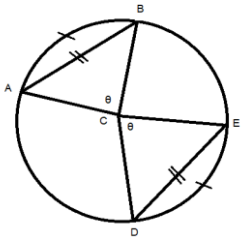
The radius CD, and the tangent line AB at the tangent point D, are perpendicular



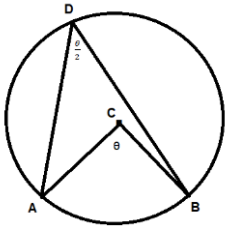
Two tangent line segments from an external point A to a circle, are equal: AB = AD



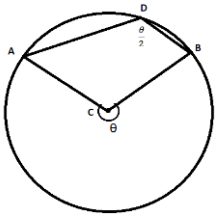
Central angles: Central angles subtended to equal arcs or chords are equal and vice versa



Inscribed angles: Inscribed angles are equal to the ½ central angles subtended to the same arc/chord



<ADB = ½ <ACB



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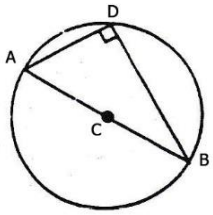
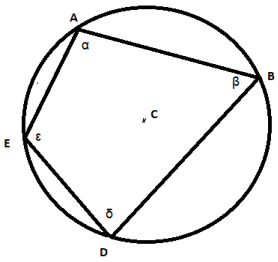
Inscribed angles subtended to the diameter of a circle are always 90°. Half of central angle

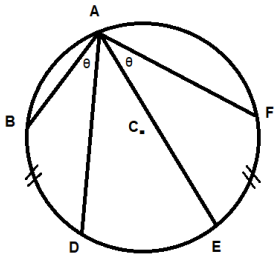


In a cyclic quadrilateral (inscribed in a circle) the sum of 2 opposite angles is 180°. Each one is half of its corresponding central angle

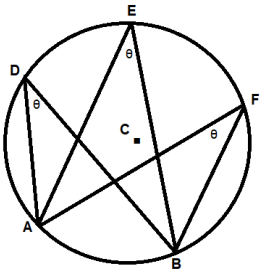


$\alpha + \delta = 180°$ and $\beta + \varepsilon = 180°$

Inscribed angles subtended to equal arc/chord are equal

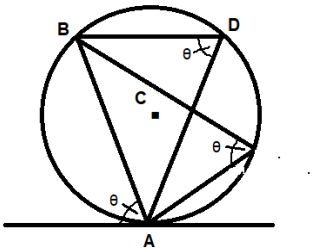


Inscribed angles subtended to the same arc/chord AB, are equal



Inscribed angle and the tangent line to a circle:

A tangent line at the point A and the secant line AB, make an inscribed angle θ, subtend to the chord AB, therefore any other inscribed angles subtended to the same chord AB, have the same angle θ



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