

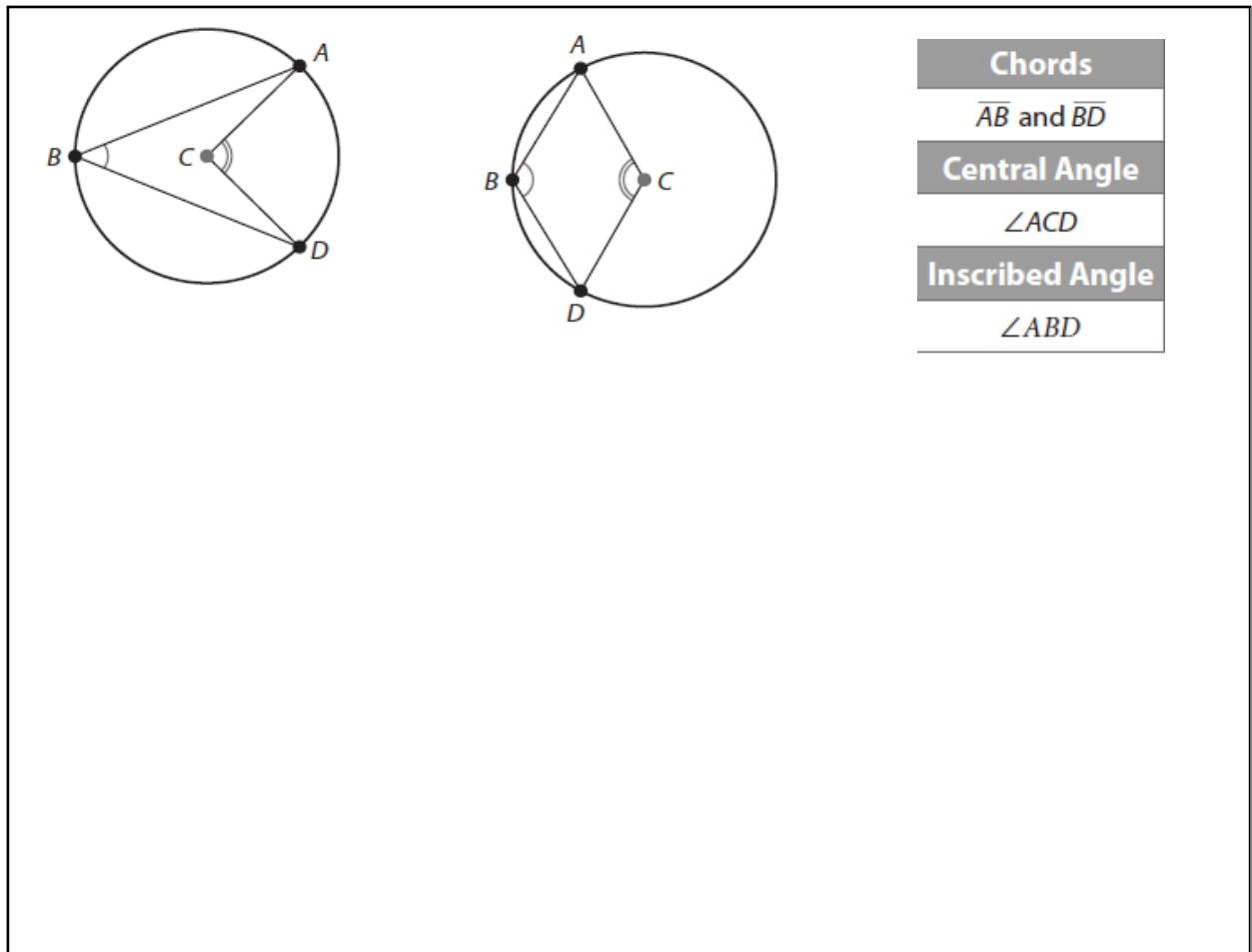
15.1 Central Angles and Inscribed Angles

How can you determine the measures of central angles and inscribed angles of a circle?

Chord- a segment whose endpoints lie on a circle

Central Angle- an angle less than 180° whose vertex lies at the center of a circle

Inscribed Angle- an angle whose vertex lies on a circle and whose sides contain chords of the circle



Arc- a continuous portion of a circle consisting of 2 points (called the endpoints of the arc) and all the points on the circle between them

Arc	Measure	Figure
<p>A minor arc is an arc whose points are on or in the interior of a corresponding central angle.</p> <p><i>-use 2 letters -less than 180</i></p>	<p>The measure of a minor arc is equal to the measure of the central angle.</p> <p>$m\widehat{AB} = m\angle ACB$</p> <p><i>symbol arc</i></p>	
<p>A major arc is an arc whose points are on or in the exterior of a corresponding central angle.</p> <p><i>-use 3 letters -greater than 180</i></p>	<p>The measure of a major arc is equal to 360° minus the measure of the central angle.</p> <p>$m\widehat{ADB} = 360^\circ - m\angle ACB$</p>	
<p>A semicircle is an arc whose endpoints are the endpoints of a diameter.</p>	<p>The measure of a semicircle is 180°.</p>	

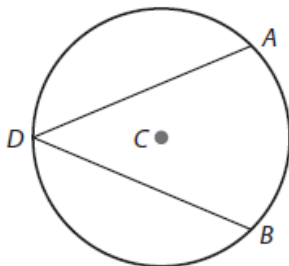
Adjacent arcs are arcs of the same circle that intersect in exactly one point. \widehat{DE} and \widehat{EF} are adjacent arcs.

Intercepted arc- endpoints that lie on the sides of an inscribed angle and all the points of the circle between them

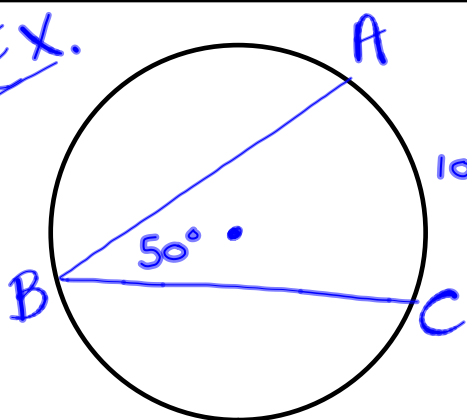
Inscribed Angle Theorem

The measure of an inscribed angle is equal to half the measure of its intercepted arc.

* $m\angle ADB = \frac{1}{2} m\widehat{AB}$



EX.



If $m\angle ABC = 50^\circ$
what is
 \widehat{AC} ?

Determine $m\widehat{DE}$, $m\widehat{BD}$, $m\angle DAB$, and $m\angle ADE$ using the appropriate theorems and postulates.

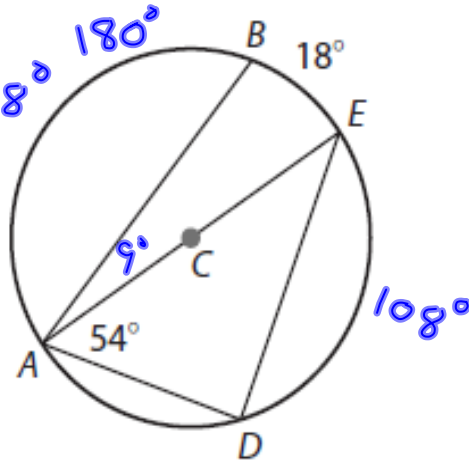
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$$m\widehat{DE} = 54 \cdot 2 = 108^\circ$$

$$m\widehat{BD} = 126^\circ$$

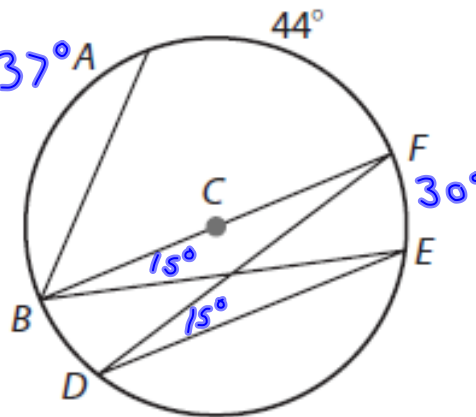
$$m\angle DAB = 63^\circ$$

$$m\angle ADE = 90^\circ$$



If $m\angle EDF = 15^\circ$, determine $m\angle ABE$ using the appropriate theorems and postulates.

$$\angle ABE = 22 + 15 = 37^\circ$$



Inscribed Angle of a Diameter Theorem

The endpoints of a diameter lie on an inscribed angle if and only if the inscribed angle is a right angle.

