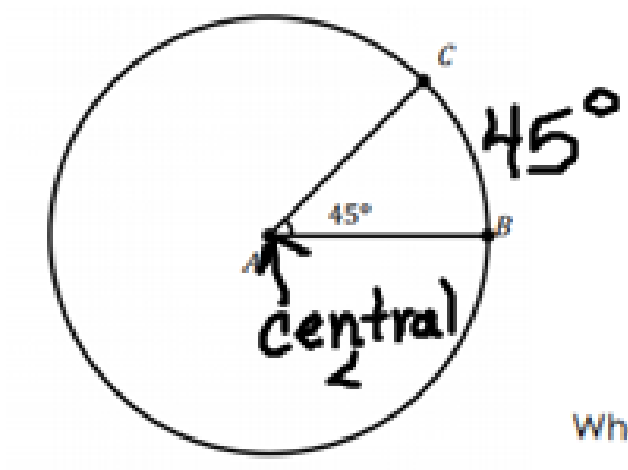
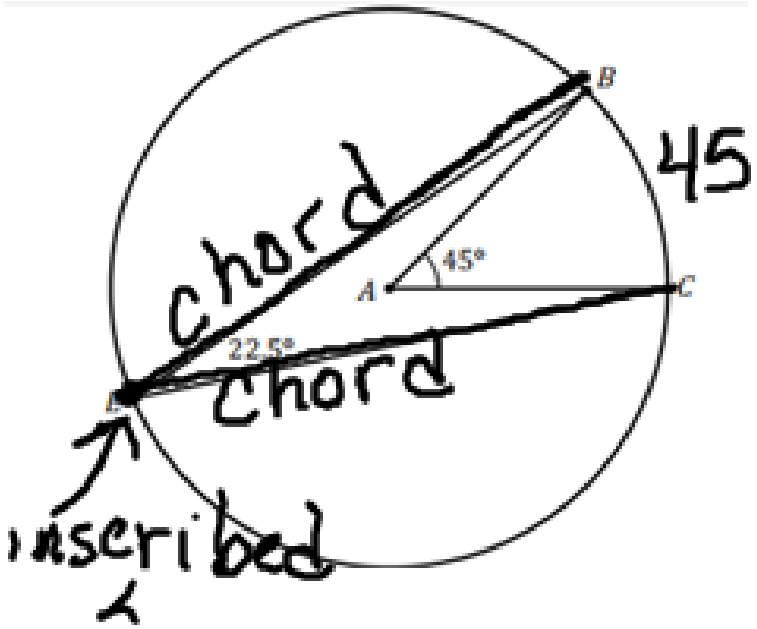
The measure of an arc on a circle is equal to the degree measure of the Central ∠ that intercepts the arc.




What is $m\widehat{BC}$?

Consider the figure below. $\angle E$ is an inscribed angle. $\widehat{BC}$ is an intercepted arc by both the central angle $\angle A$ and the inscribed angle.



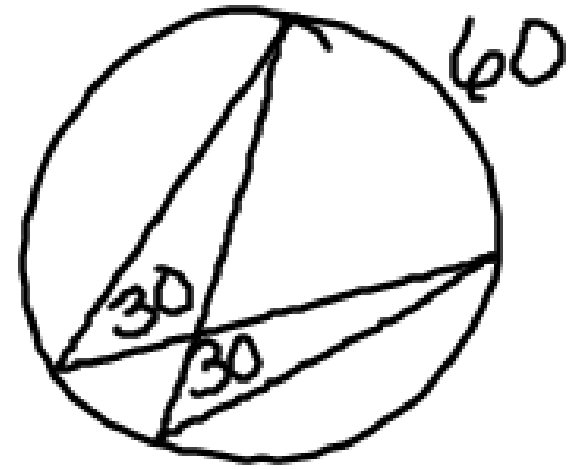

Define the inscribed angle.

The vertices are on the ⊙ made of chords

Compare and contrast the inscribed angle and the intercepted arc.

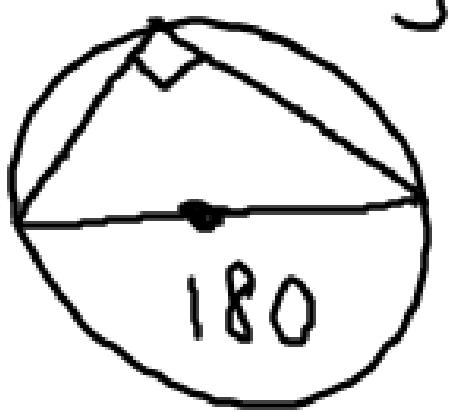
# Inscribed ∠ Conjectures

In a circle, the measure of an inscribed angle is 1/2 the measure of the central angle with the same intercepted arc.



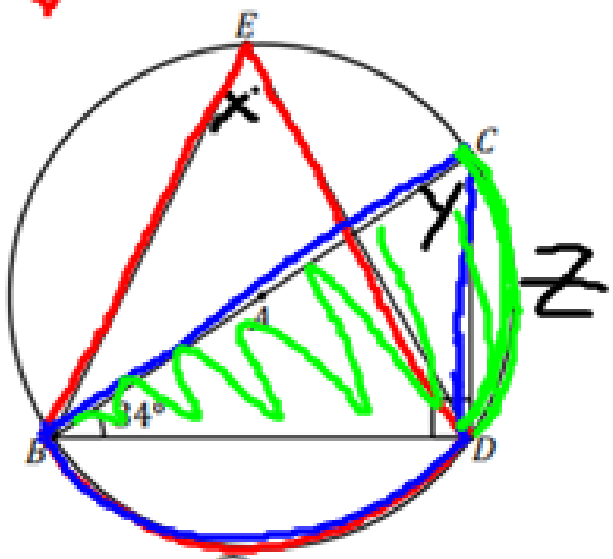

In a circle, two inscribed angles with the same intercepted arc are congruent

Any angle inscribed in a semicircle is a Right angle.



**Practice:**

Consider circle A in the following figure, and find $m\angle BED$, $m\angle BCD$, & $m\widehat{CD}$.




$m\widehat{BD} = 112°$

$m\angle BED = \frac{112}{2}$
$= 56°$

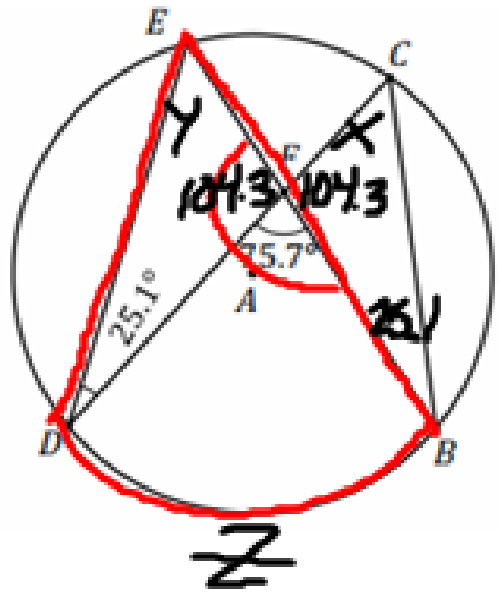
$m\angle BCD = 56°$

$m\widehat{CD} = 2(34)$
$= 68°$

**Your turn:**

Consider circle A in the following figure, and find $m\angle BCF$, $m\angle BED$, & $m\widehat{DB}$.

$$\begin{array}{r} 180 \\ -\ 75.7 \\ \hline 104.3 \end{array}$$




$$\begin{array}{r} 104.3 \\ +\ 25.1 \\ \hline 129.4 \end{array}$$

$$\begin{array}{r} 180 \\ -\ 129.4 \\ \hline \end{array}$$

$m\angle BCF = 50.6$

$m\angle BED = 50.6$

$m\widehat{DB} = 2(50.6)$

$= 101.2°$