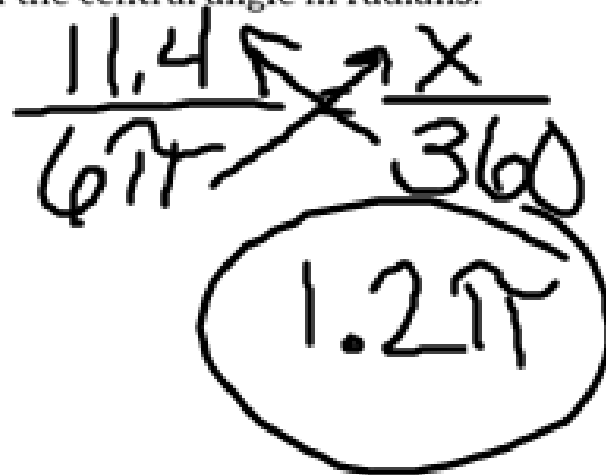


An arc has a length of 4π units and a radius of 6 units. What is the angle of the sector in radians?

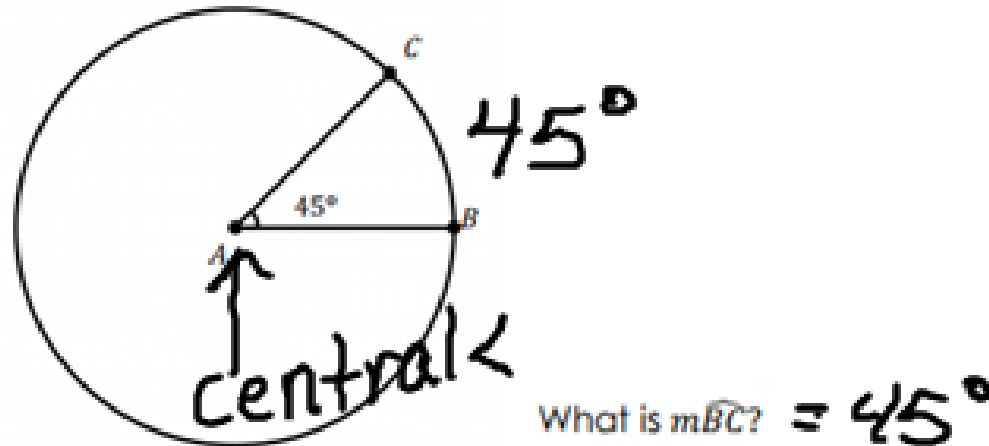
Suppose a circle with an 11.4 inch arc intercepted by the central angle and a radius that is 3 inches long. Determine the measure of the central angle in radians.



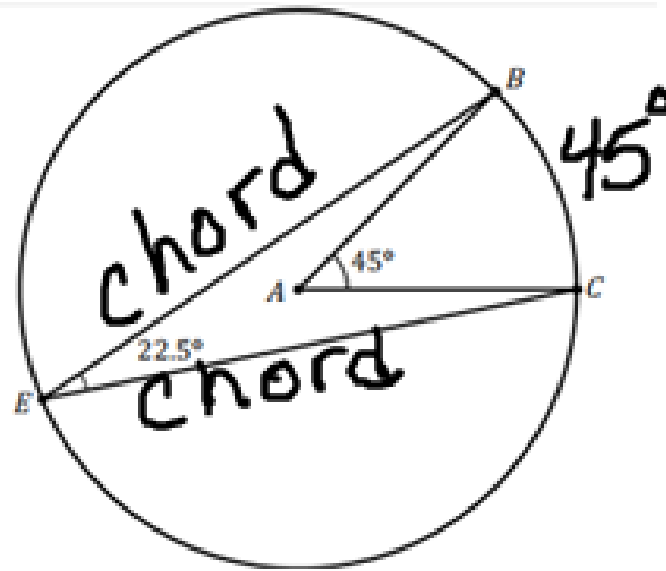
$$\frac{4104 = 18.8496x}{18.8496} \quad \frac{18.8496}{18.8496}$$

$$x = 217.7235\pi$$

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



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.

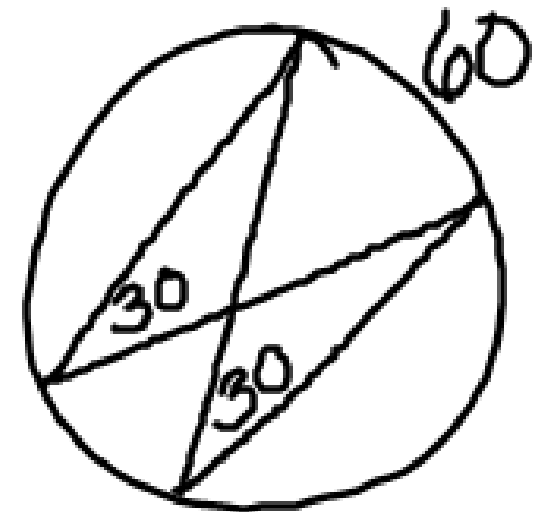


Define the inscribed angle.

Compare and contrast the inscribed angle and the intercepted arc.

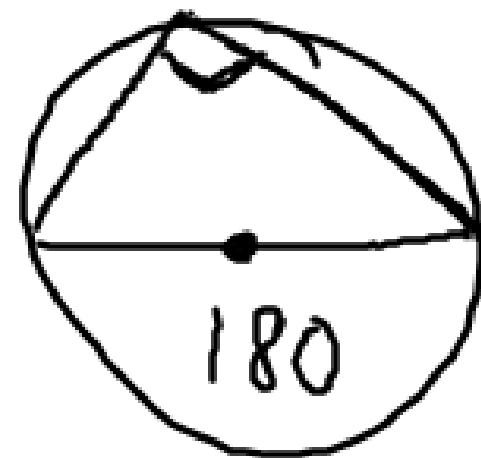
Inscribed < Conjectures

In a circle, the measure of an inscribed angle is $\frac{1}{2}$ the measure of the central angle with the same intercepted arc.



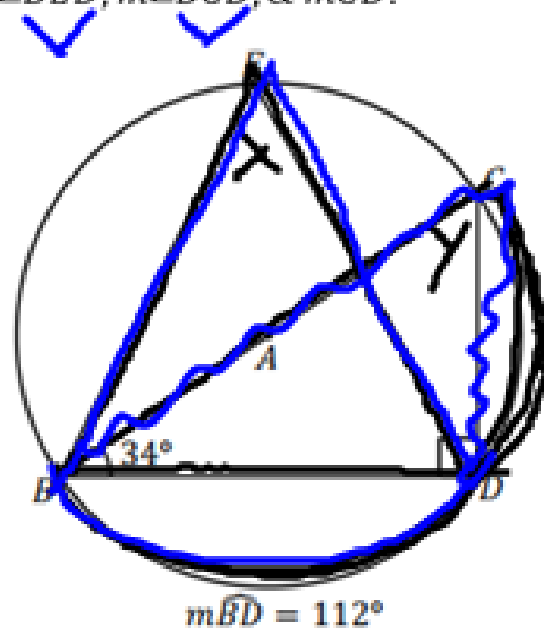
In a circle, two inscribed angles with the same intercepted arc are congruent.

Any angle inscribed in a semicircle is a right angle.



Practice:

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

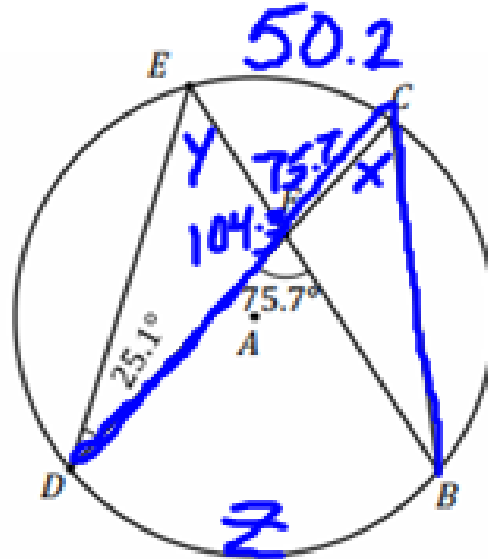


$$\begin{aligned} &= 2(34) \\ &= 68^\circ \end{aligned}$$

$$m\angle BED = m\angle BCD = 56^\circ$$

Your turn:

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



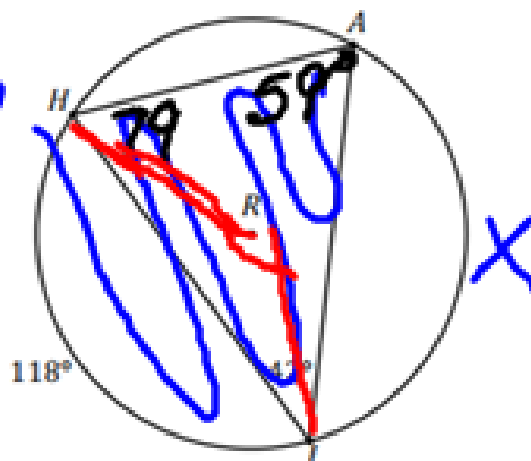
$$\begin{array}{r}
 25.1 \\
 + 104.3 \\
 \hline
 129.4 \\
 180 \\
 - 129.4 \\
 \hline
 50.6
 \end{array}$$

$$\begin{aligned}
 m\angle BCF &= m\angle BED = 50.6 \\
 50.6(2) &= 101.2^\circ \\
 &= m\widehat{DB}
 \end{aligned}$$

Informal Assessment:

$$118 \div 2 = 59$$
$$59 + 42 = 101$$
$$\begin{array}{r} 180 \\ -101 \\ \hline \end{array}$$

$$79(2) = 158$$



Which of the following is the measure of \widehat{AT} ?

- (A) 118°
- (B) 158°
- (C) 160°
- (D) 202°