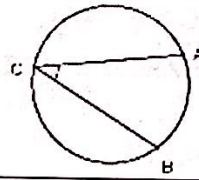
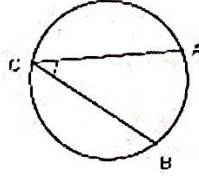
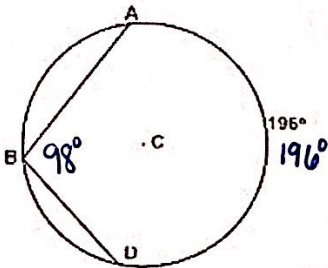


## Day 3 – Inscribed Angles and Intercepted Arcs – Notes

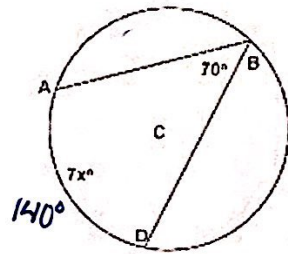
**Learning Target:** I can use properties and theorems of inscribed angles to solve problems.

Name	Definition	Measure	Picture
Inscribed Angle	An angle whose vertex is on a circle and whose sides contain chords of the circle	The measure of an inscribed angle is half the measure of its intercepted arc.	 $\angle ACB = \frac{1}{2} \widehat{AB}$
Intercepted Arc	An arc whose endpoints lie on the sides of an inscribed angle and all the points of the circle between them.	The measure of an intercepted arc is double the measure of the inscribed angle.	 $\widehat{AB} = 2 \cdot \angle ACB$

**Example:** Find the measure of angle ABD.



**Example:** Find the value of x and arc ABD.



$$70 = \frac{1}{2} \cdot 7x \quad \text{or} \quad 2 \cdot 70 = 7x$$

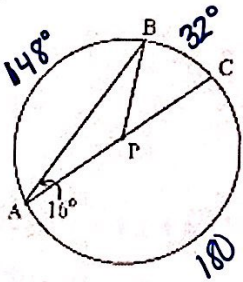
$$70 = 3.5x$$

$$\boxed{20 = x}$$

$$\boxed{20 = x}$$

$$\widehat{ABD} = 220^\circ$$

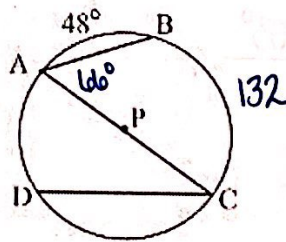
**Example:** Find the measure of arc AB and BC.



$$\widehat{AB} = 148^\circ$$

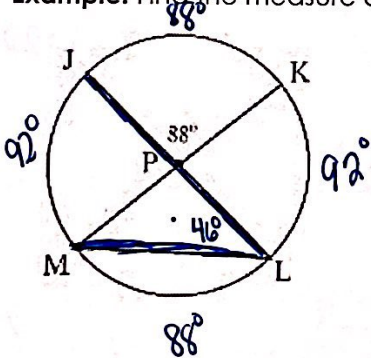
$$\widehat{BC} = 32^\circ$$

**Example:** Find the measure of angle BAC.



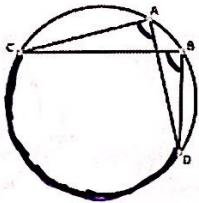
$$\angle BAC = 66^\circ$$

**Example:** Find the measure of angle JLM.

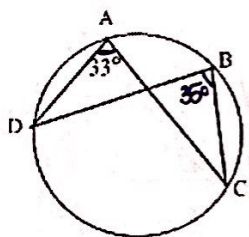


$$\angle JLM = 46^\circ$$

Intercepted Arcs

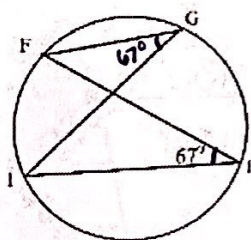
Name	Theorem	Hypothesis	Conclusion
Intercepted Arcs Corollary	If inscribed angles of a circle intercept the same arc, then the angles are congruent		$\angle CAB \cong \angle CBD$

Example: Find the measure of angle B.



$\angle B = 35^\circ$

Example: Find the measure of angle G and arc IF.



$\angle G = 67$

$\widehat{IF} = 134^\circ$