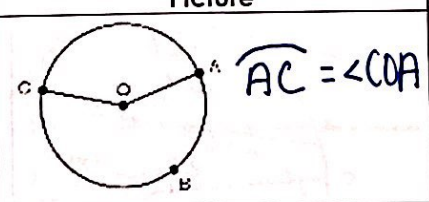
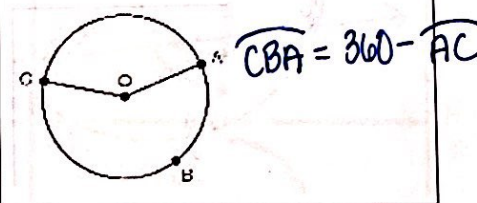
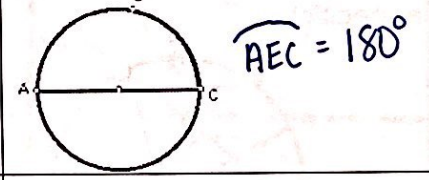
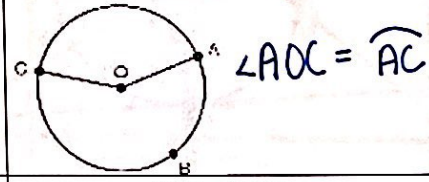
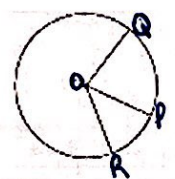


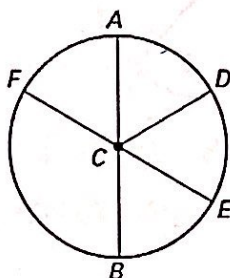
Day 2 - Arcs & Central Angles - Notes

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

An **arc** is an unbroken part of a circle consisting of two points called the endpoints and all the points on the circle between them.

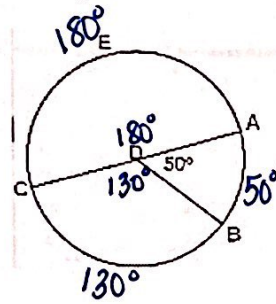
Arc or Angle	Definition	Measure	Picture
Minor Arc	An arc whose points are on or in the interior of a central angle. Minor arcs are less than 180° and only use two letters to name them.	The measure of a minor arc is equal to the measure of the central angle.	
Major Arc	An arc whose endpoints are on or in the exterior of a central angle. Major arcs are between 180° and 360° . Three letters are used to name a major arc.	The measure of a major arc is equal to 360° minus the measure of its central angle or minor arc.	
Semicircle	An arc whose endpoints lie on a diameter. Semicircles are named using three letters.	The measure of a semicircle is 180° .	
Central Angle	An angle whose vertex is the center of the circle.	The measure of a central angle is equal to the measure of its minor arc.	
Name	Theorem	Hypothesis	Conclusion
Arc Addition Postulate	The measure of an arc formed by two adjacent arcs is the sum of the measures of the two arcs.		$\widehat{QP} + \widehat{PR} = \widehat{QR}$

Example: Identify the following arcs as minor, major, or semicircle.



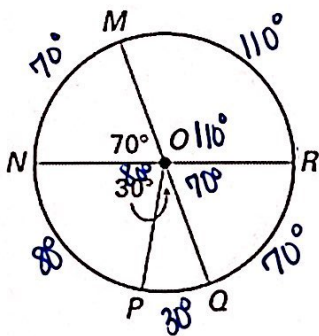
1. \widehat{AE} minor
2. \widehat{FDE} semicircle
3. \widehat{FA} minor
4. \widehat{DFB} major

Example: Find the measure of the following:



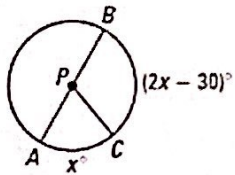
1. $m\widehat{AB}$ 50°
2. $m\widehat{BC}$ 130°
3. $m\widehat{AEC}$ 180°
4. $m\widehat{BCA}$ 310°

Example: Find the measure of the following:



1. $m\widehat{MN}$ 70°
2. $m\widehat{NQ}$ 110°
3. $m\widehat{NQR}$ 180°
4. $m\widehat{MRP}$ 210°
5. $m\widehat{QR}$ 70°
6. $m\widehat{MR}$ 110°
7. $m\widehat{QMR}$ 290°
8. $m\widehat{PQ}$ 30°
9. $m\widehat{PRN}$ 280°
10. $m\widehat{MQN}$ 290°

Example: Find the value of x . Then find the measure of arc BC.



$$\widehat{AC} + \widehat{BC} = 180$$

$$x + 2x - 30 = 180$$

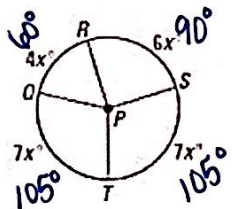
$$3x = 210$$

$$x = 70$$

$$\widehat{BC} = 2(70) - 30$$

$$\widehat{BC} = 110^\circ$$

Example: Find the value of x . Then find the measure of all central angles and arcs.



$$4x + 6x + 7x + 7x = 360$$

$$24x = 360$$

$$x = 15$$