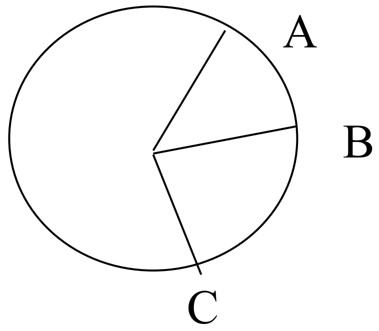
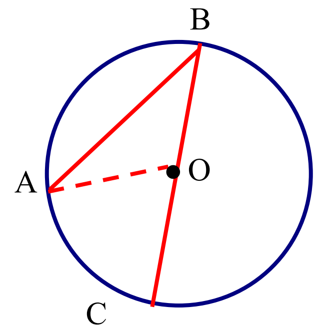
Arc Addition Postulate

Arc Addition Postulate **The arc addition postulate is parallel to the segment addition postulate and the angle addition postulate. That is, an arc is equal to the sum of its parts.**



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

Theorem The measure of an inscribed $\angle$ is half the measure of the intercepted arc.



Given: $\angle$ABC inscribed

Prove: $\angle ABC = \frac{1}{2}\overset{\frown}{AC}$

	Statements	Reasons
1.	Draw OA	Construction
2.	$\overline{OB} \cong \overline{OA}$	Radii
3.	$\angle A \cong \angle B$	2 sides of Δ are $\cong$, $\angle$'s opposite are $\cong$
4.	$\angle AOC = \angle A + \angle B$	Ext $\angle$ = 2 remote int $\angle$'s
5.	$\angle AOC = \angle B + \angle B$	Sub
6.	$\angle AOC = 2\angle B$	D-Prop
7.	$\frac{1}{2}\angle AOC = \angle B$	DPE
8.	$\angle AOC \cong \overset{\frown}{AC}$	Central $\angle$, arc
9.	$\frac{1}{2}\overset{\frown}{AC} = \angle B$	Sub