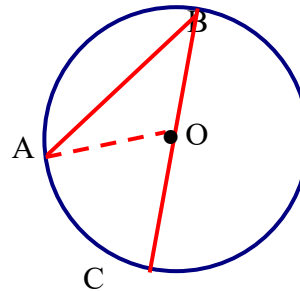**Theorem** The measure of an inscribed $\angle$ is half the measure of the intercepted arc.

Given: $\angle ABC$ inscribed

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

Statements	Reasons
1. Draw OA	Construction
2. $\overline{OB} \cong \overline{OA}$	Radii
3. $\angle A \cong \angle B$	2 sides of $\triangle$ 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. $\dfrac{1}{2} \angle AOC = \angle B$	DPE
8. $\angle AOC \cong \overset{\frown}{AC}$	Central $\angle$, arc
9. $\dfrac{1}{2} \overset{\frown}{AC} = \angle B$	Sub