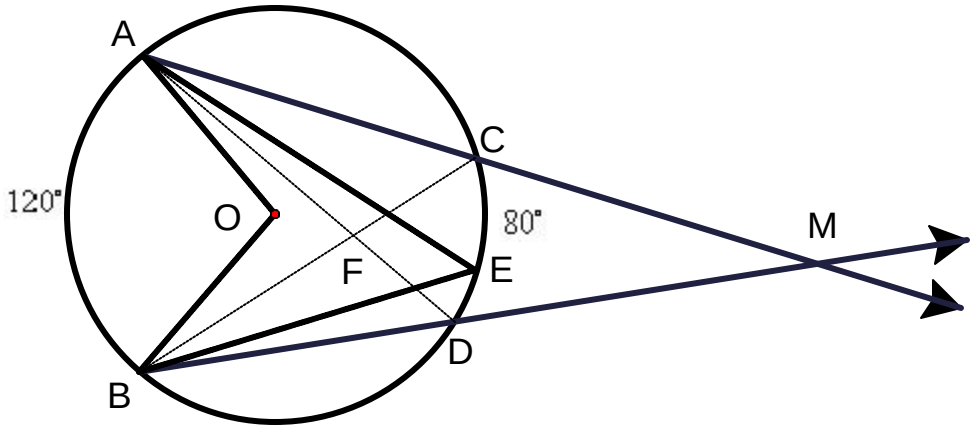
Applications 6.1 & 6.2
Chords, Tangents, Secants

The next figure suggests a way to remember some of the properties of angles and arcs in circles. Note that the sizes of the angles decrease from left to right and that O is the circle's center. The following arcs and angles are shown in the figure:



Given arcs: $m\widehat{AB} = 120^\circ$ and $m\widehat{CD} = 80^\circ$

Central angle:

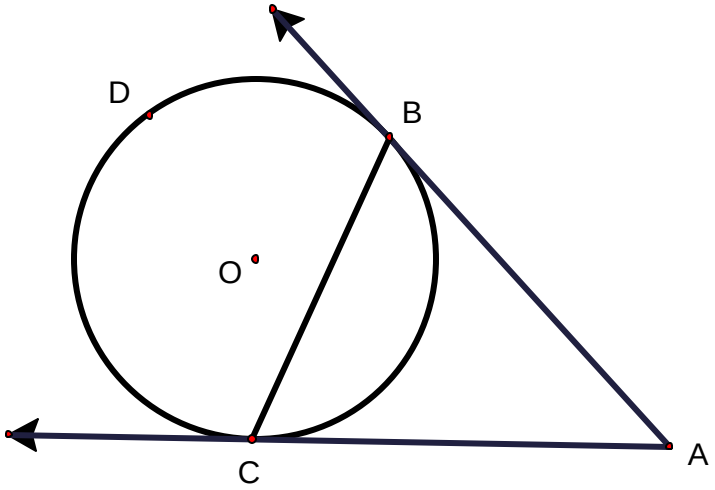
Angle formed by 2 chords :

Inscribed angle:

Angle formed by two secants :

Problem 1 Given: $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are tangents to $\odot O$, $m\overset{\frown}{BC} = 126^\circ$.

(6.2 - # 6) Find: a) $m\angle A$
b) $m\angle ABC$
c) $m\angle ACB$



Problem 2 Given: $\overrightarrow{AB}$ and $\overrightarrow{AC}$ are tangents to $\odot O$, $m\angle ACB = 68^\circ$.

(6.2 - #7) Find: a) $m\overset{\frown}{BC}$
b) $m\overset{\frown}{BDC}$
c) $m\angle ABC$
d) $m\angle A$

Problem 3 Given: Diameter $\overline{AB} \perp \overline{CE}$ at D

(6.2 - #20) Prove: CD is the geometric mean of AD and DB.