11.2| Arcs & Central Angles

Central angle – two sides of an angle meet at the center of the ⊙

∠BAC, ∠CAB, ∠A

arc – curved lines

minor arc – intersection of ⊙ and the central ∡. (<180)

$\overparen{BC}$, $\overparen{BE}$

major arc – part of ⊙ in the exterior of the central ∡ (>180)

$\overparen{BDE}$

Semicircle – congruent arcs whose endpoints lie on the diameter of a ⊙

adjacent arcs – "next to"; arcs of a ⊙ w/ only one point in common

ex 1)

360° = 1 rev
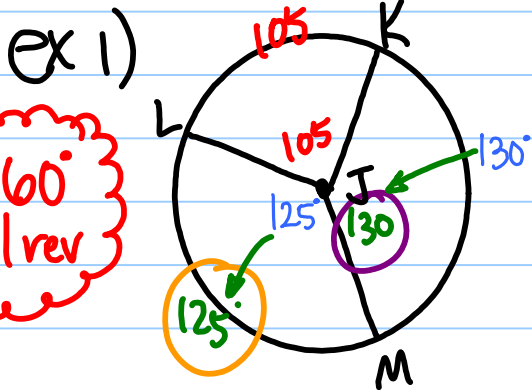
measure of minor arc KM

Given: $m\overparen{KM} = 130°$

m∠LJM = 125°

measure of angle LJM

In circle J, find $m\overparen{LM}$, m∠KJM, & m∠LK.

Same as m∠LJM = (125)

Same as m$\overparen{KM}$ = (130)

360
−(125+130)

= 360
− 255
(105)

Postulate 11-1 Arc Addition Postulate
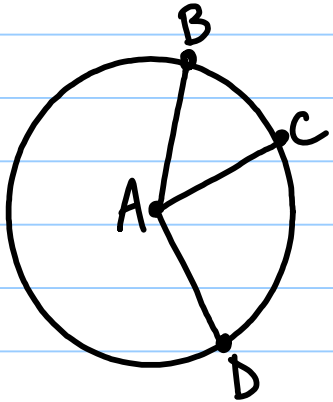
$$m\overarc{BD} = m\overarc{BC} + m\overarc{CD}$$

big piece

little pieces

"Crust"

Thm 11.3
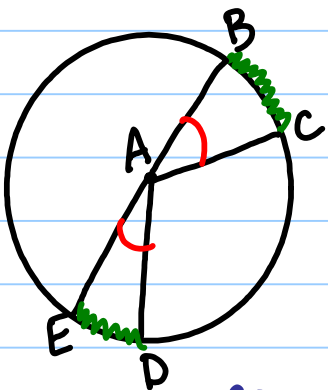
or
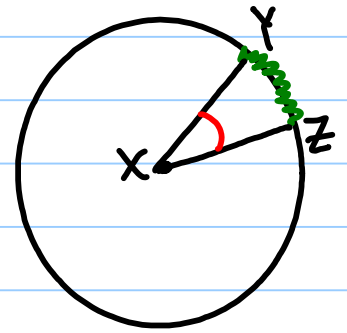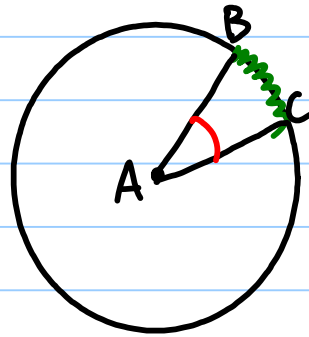
$\overarc{BC} \cong \overarc{DE}$ iff $\angle BAC \cong \angle DAE$

$\overarc{BC} \cong \overarc{YZ}$ iff $\angle BAC \cong \angle YXZ$

ex 2)

$82°$

$48°$

$132°$
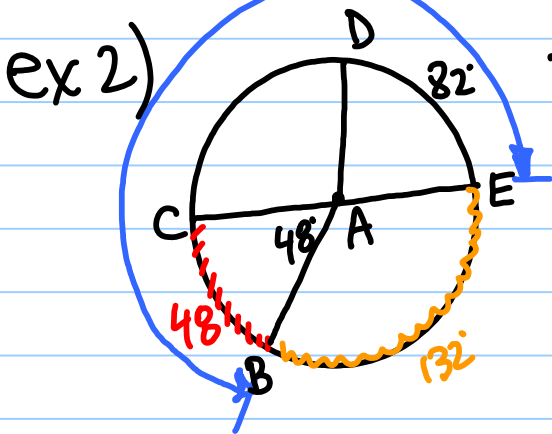
In $\odot A$, $\overline{CE}$ is a diameter. Find $m\overarc{BC}$, $m\overarc{BE}$, & $m\overarc{BDE}$.

$\boxed{48°}$

$\begin{array}{r} 180 \\ -48 \\ \hline \boxed{132°} \end{array}$

$\begin{array}{r} 360 \\ -132 \\ \hline \boxed{228} \end{array}$