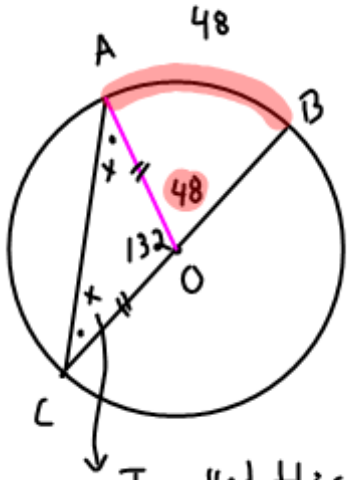
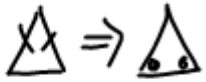
Warm ↑ (Recall that central ∠ is equal to measure of the arc)



I called this ∠x

Recall  ⇒

Given: $m\overset{\frown}{AB} = 48$ in ⊙O

Find: $\angle ACB$

$\angle AOC = 132$ $(180 - 48 = 132)$

$\overline{AO} \cong \overline{CO}$ radii ≅

$\angle CAO + \angle ACO + \angle AOC = 180$ (why?)

$x + x + 132 = 180$

$2x + 132 = 180$

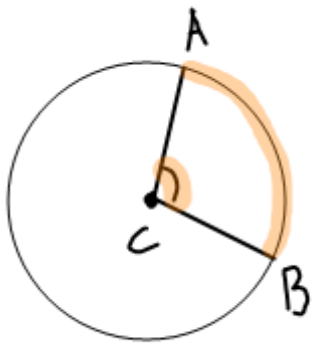
$2x = 48$

$x = 24 \Rightarrow \underline{\angle ACB = 24^\circ}$ ✓

10.5. Honors Geometry

DATE: 4/21

Vertex Location: CENTER of circle



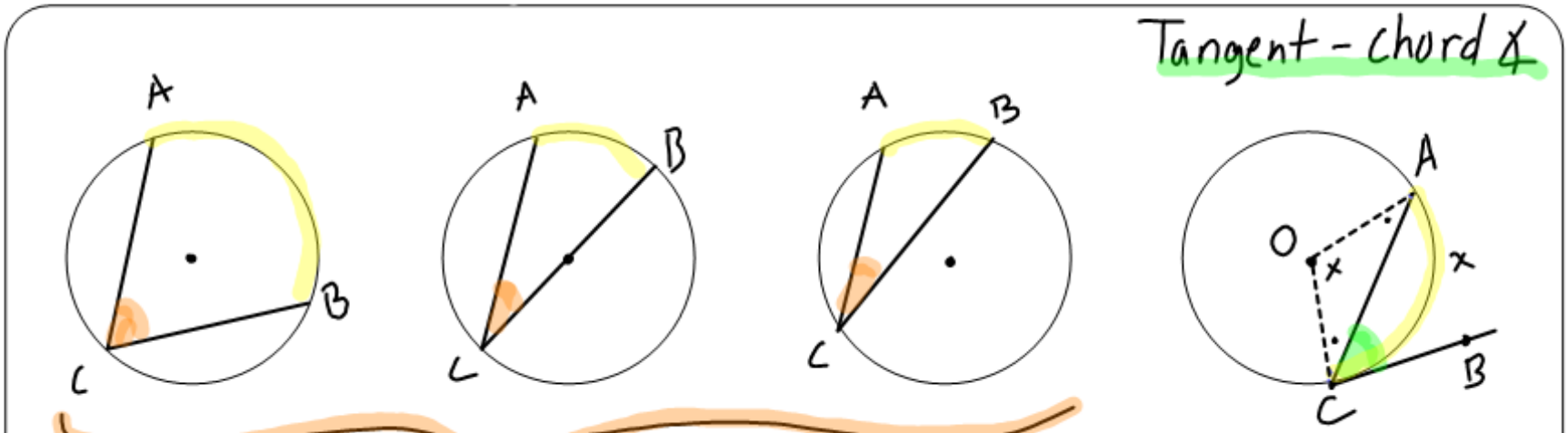
Recall from Thursday,

Formula: $m\angle ACB = m\overset{\frown}{AB}$

↓ Central ∠ = ↓ measure of arc

Vertex Location: ON the circle

Vertex Location: ON the circle



Tangent - chord ∠

Inscribed ∠

Formula (same):

$m\angle ACB = \frac{1}{2}\overset{\frown}{AC}$

Formula: $m\angle ACB = \frac{1}{2} m\overset{\frown}{AB}$

SKETCH OF PROOF: Let $\overset{\frown}{AC} = x$.
Must show $m\angle ACB = \frac{1}{2}x$. Construct $\overline{OA}, \overline{OC} \Rightarrow \overline{OA} \cong \overline{OC}$ (why?). $\therefore \angle AOC = x$. $\triangle \Rightarrow \triangle$, so $\angle OCA = \frac{180-x}{2}$
But $\angle OCB = 90°$ (why?). So $90 - \left(\frac{180-x}{2}\right) = \frac{x}{2}$, QED.