ANGLES INSIDE the CIRCLE
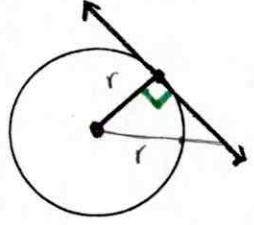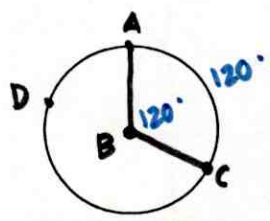
Radius and Tangent are ⊥
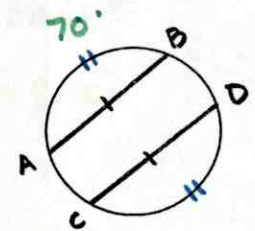

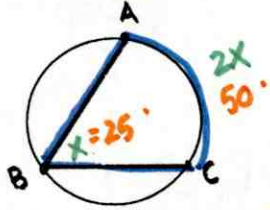### Central Angle ≅ intercepted Arc

$$m\widehat{ADC} = 240°$$

$$\angle ABC \cong \widehat{AC}$$
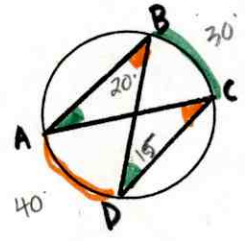
Congruent Chords

$$\widehat{AB} \cong \widehat{CD}$$

Inscribed Angle = ½ (intercepted Arc)

$$m\angle ABC = \frac{1}{2}(m\widehat{AC})$$

$$m\widehat{AC} = 2(m\angle ABC)$$

Inscribed Angles with same Arc are ≅

$$\angle BAC \cong \angle BDC$$
$$\widehat{BC}$$

$$\angle ABD \cong \angle ACD$$
$$\widehat{AD}$$

Inscribed Triangle (with the diameter)
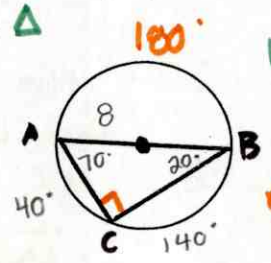
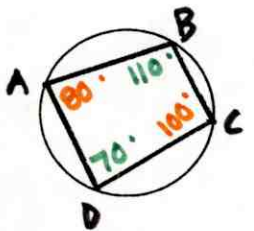a ⊾ Δ   ↓ hypotenuse
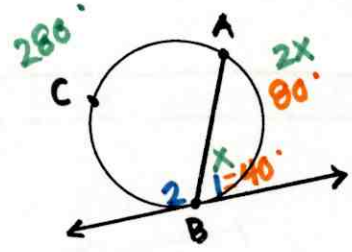

$$m\widehat{AB} = 180$$

Inscribed Quadrilateral

opposite ∠s supplementary

$$\angle A + \angle C = 180°$$

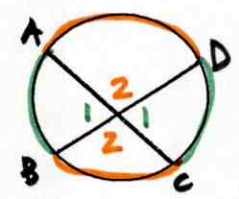$$\angle B + \angle D = 180°$$

Angle formed by a Chord and Tangent

$$m\angle 1 = \frac{1}{2}(m\widehat{AB})$$

$$m\angle 2 = \frac{1}{2}(m\widehat{ACB})$$

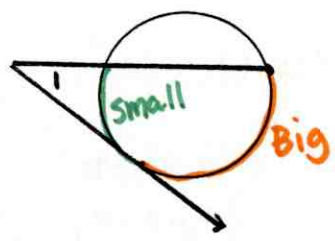$$m\angle 1 + m\angle 2 = 180 \text{ LP}$$

Angle formed by two Chords

$$m\angle 1 = \frac{m\widehat{AB} + m\widehat{CD}}{2}$$

$$m\angle 2 = \frac{m\widehat{AD} + m\widehat{BC}}{2}$$
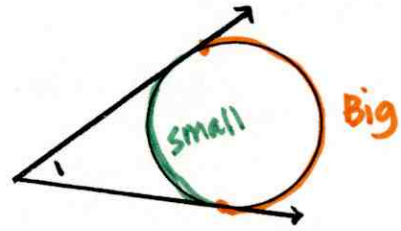
$$m\angle 1 + m\angle 2 = 180 \text{ LP}$$

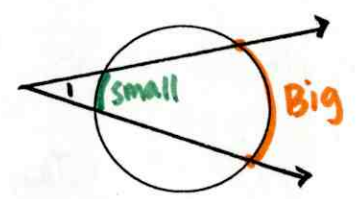## ANGLES OUTSIDE the CIRCLE

Angle formed by a Secant and Tangent

$$m\angle 1 = \frac{Big - Small}{2}$$

Angle formed by two Tangents

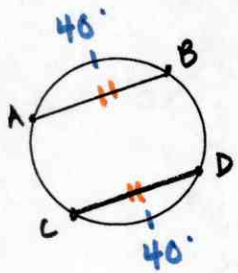$$m\angle 1 = \frac{Big - Small}{2}$$

✳ $m\angle 1 + Small = 180$

Angle formed by two Secant
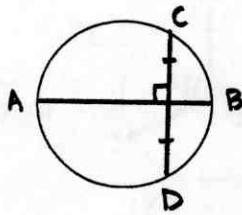

$$m\angle 1 = \frac{Big - Small}{2}$$

SEGMENTS INSIDE the CIRCLE
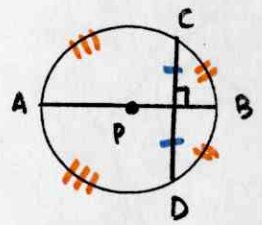
Congruent Arcs then ≅ chords

$\overline{AB} \cong \overline{CD}$

Chord that is a ⊥ Bisector of another
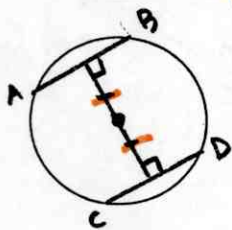
$\overline{AB}$ is a diameter

Diameter that is ⊥ to a Chord

Bisects chord $\overline{CD}$
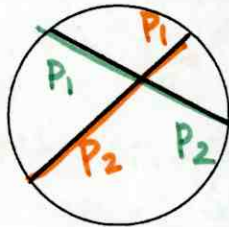
$\overparen{CBD}$

$\overparen{CAD}$

Chords that are equidistant from center

then chords are ≅

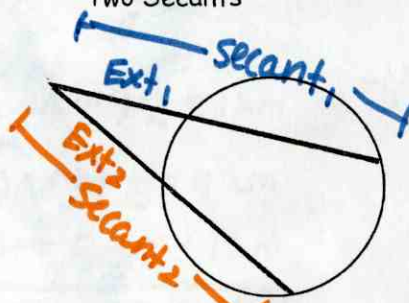$\overline{AB} \cong \overline{CD}$

Two Chords

$P_1(P_2) = P_1(P_2)$
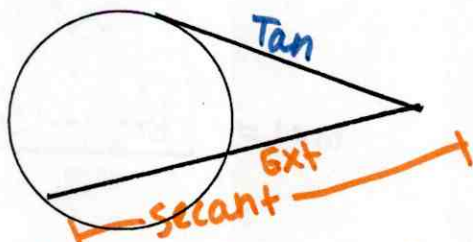
SEGMENTS OUTSIDE and INSIDE the CIRCLE

Two Tangents

Tan₁
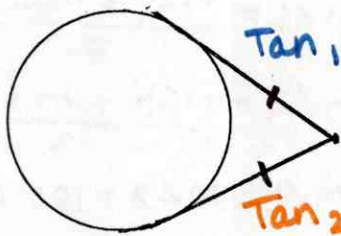
Tan₂

Tangent₁ = Tangent₂

Two Secants

Ext₁

secant₁

Ext₂

Secant₂

$Ext_1(secant_1) = Ext_2(secant_2)$

Tangent and a Secant

Tan

Ext

secant

$(tan)^2 = Ext(Secant)$

Radius and Tangent are ⊥ (10.1)

r

r

$c^2 = a^2 + b^2$

SOH CAH TOA

30 - 60 - 90

45 - 45 - 90