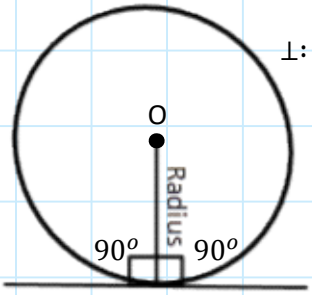
M9 - 10.3 - Circles/Semi/Tangents/Polygons Notes



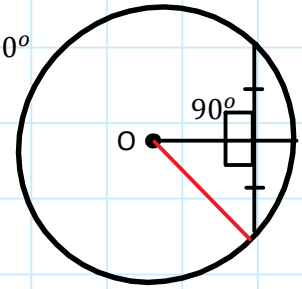
Tangent

Radius ⊥ to Tangent

⊥: Perpendicular 90^o

Tangent: Line meets Circe Edge

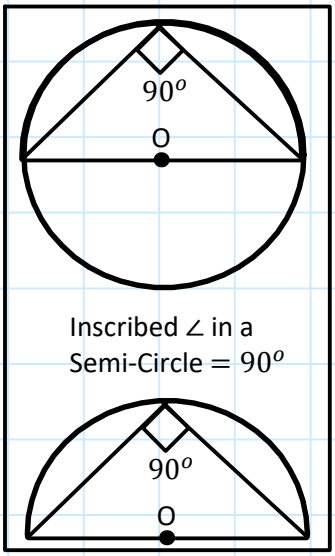
Draw a Radius



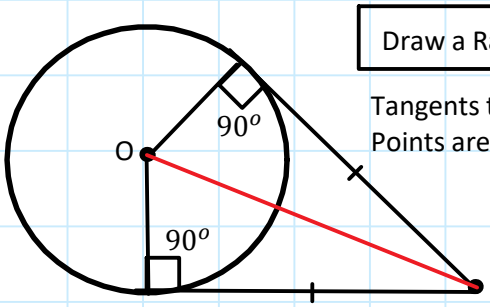
Radius ⊥ to Chord

⊥ Bisects Chord & goes through Centre

(Bisects: Cuts in Half)



Inscribed ∠ in a Semi-Circle $= 90^o$

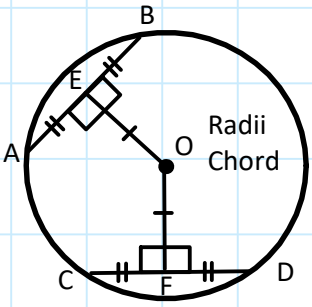


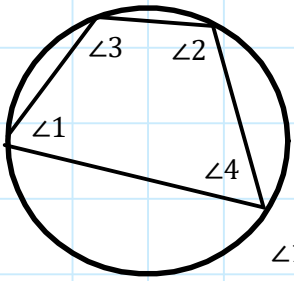
Draw a Radius to Ext Pt.

Tangents to Exterior Points are Equal.

Exterior Point (Ext Pt)

If: $OE = OF$
Then: $AB = CD$





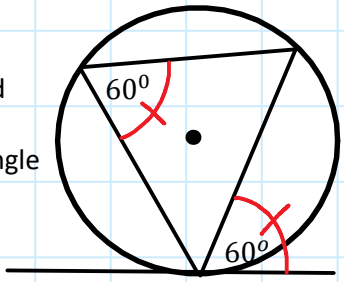
$\angle 1 + \angle 2 = 180^o$

$\angle 3 + \angle 4 = 180^o$

Interior Angles in a Cyclic Quadrilateral sum to 360^o.

$\angle 1 + \angle 2 + \angle 3 + \angle 4 = 180^o$

∠ Between Tangent and Chord = Inscribed Angle Opposite of Chord.



Int : Interior
Ext : Exterior
n : # of Sides
$\sum$: Sum

$$Int\angle' = \frac{\#\Delta' s \times 180^o}{n}$$

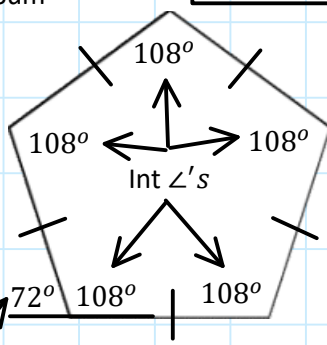
OR

$$\sum \text{Int}\angle = (n-2) \times 180^o$$

$\sum \text{Int}\angle = (5-2) \times 180^o$

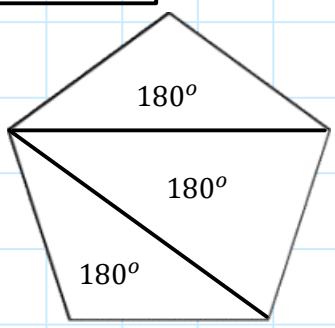
$\sum \text{Int}\angle = 3 \times 180^o$

$\sum \text{Int}\angle = 540^o$



Ext ∠

Pentagon: 5 Sides



Draw Triangles to Vertices (Without Overlap)

$$\text{Int}\angle = \frac{\sum \text{Int}\ \angle' s}{n} = \frac{(n-2)\times 180^o}{n}$$

$\text{Int}\angle = \frac{540^o}{5}$

$\text{Int}\angle = 108^o$

$\text{Ext}\angle' s \sum = 360^o$