

CHAPTER 10.7 INSCRIBED & CIRCUMSCRIBED POLYGONS

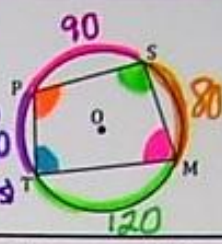
Name: _____

GETTING STARTED!

Given: $\odot O$, $m\widehat{SM} = 80$, $m\widehat{PS} = 90$, $m\widehat{PT} = 70$

Find: The measures of:

$\angle P = 100^\circ$ $\frac{120+80}{2}$ $\angle M = 80^\circ$ $\frac{70+90}{2}$ $\angle S + \angle T = 180^\circ$ $\frac{100+80}{2}$ $\angle S = 95^\circ$ $\frac{70+120}{2}$ $\angle T = 85^\circ$ $\frac{90+80}{2}$ $\angle P + \angle M = 180^\circ$ $(95+85)$



DEFINITIONS AND THEOREMS - complete the following definitions and theorems and determine which it is. Write D for definition and T for Theorem in the blank before each sentence.

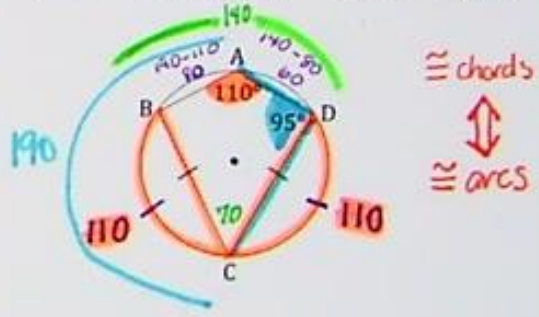
- D A polygon is **inscribed** in a circle if all of its vertices lie ON the \odot , all sides ^{are} chords
- D A polygon is **circumscribed** about a circle if all of its sides are tangent to the \odot
- D The center of a circle circumscribed about a polygon is the Circumcenter of the polygon.
- D The center of a circle inscribed in a polygon is the incenter of the polygon.
- T If a quadrilateral is inscribed in a circle, then its opposite \angle 's are supplementary
- T If a parallelogram is inscribed in a circle, then it must be a RECTANGLE (see above)

10.7 INSCRIBED & CIRCUMSCRIBED POLYGONS HW

Pp 489 - 491 (3, 6, 7; 9 - 12; 14 - 16; 19)

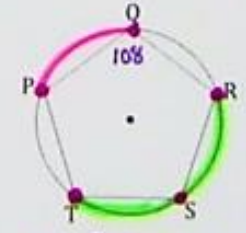
3) Given: $\angle A = 110^\circ$, $\widehat{BC} \cong \widehat{CD}$, $\angle D = 95^\circ$

- Find:
- a) $\angle C = 180 - 110 = 70^\circ$
 - b) $\widehat{BC} = \frac{1}{2}(2 \cdot 110) = 110^\circ$
 - c) $\angle B = \frac{1}{2}(60 + 110) = \frac{1}{2}(170) = 85^\circ$
 - d) $\widehat{AB} = 190 - 110 = 80^\circ$

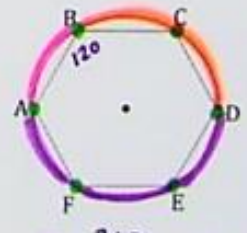


6) Given: PQRST is a regular pentagon.
 $\nabla ABCDEF$ is a regular hexagon.

- Find:
- a) $m\widehat{PQ} = \frac{360}{5} = 72^\circ$
 - b) $m\widehat{RT} = \frac{2}{5}(360) = 144^\circ$
 - c) $m\widehat{AB} = \frac{360}{6} = 60^\circ$
 - d) $m\widehat{BD} = \frac{2}{6} = \frac{1}{3}(360) = 120^\circ$
 - e) $\widehat{DEA} = \frac{2}{6} = \frac{1}{2}(360) = 180^\circ$



$E = \frac{360}{5} = 72$
 $I = 180 - E$
 $= 180 - 72$
 $= 108^\circ$
 5 \angle 's 5 arcs



$E = \frac{360}{6} = 60$
 $I = 180 - E$
 $= 180 - 60$
 $= 120^\circ$