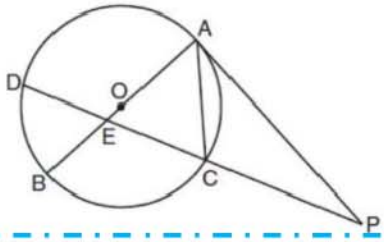
Geometry CC – Mr. Valentino
Unit 12 Day 7: Super Circles Day 1

Name: _____
Date: _____ Per: _____

Aim: How can we solve "Super Circles?"

Do Now:
In the accompanying diagram, $\overline{PA}$ is tangent to circle O at A, chord $\overline{AC}$ and secant $\overline{PCED}$ are drawn, and chords $\overline{AOB}$ and $\overline{CD}$ intersect at E. If $m\widehat{AD} = 130$ and $m\angle BAC = 50$ find:



m∠P =

m∠BEC =

m∠PCA =

SUPER CIRCLES – Woah!

1. In the diagram, isosceles triangle ABC is inscribed in circle O, and vertex angle BAC measures 40°. Tangent $\overline{PC}$, secant $\overline{PBA}$ and diameters $\overline{BD}$ and $\overline{AE}$ are drawn. Find:

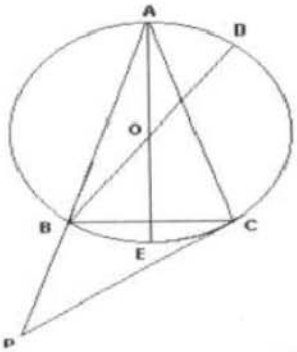
a. $m\widehat{BC}$ =

b. m∠ABD =

c. m∠DOE =

d. m∠P =

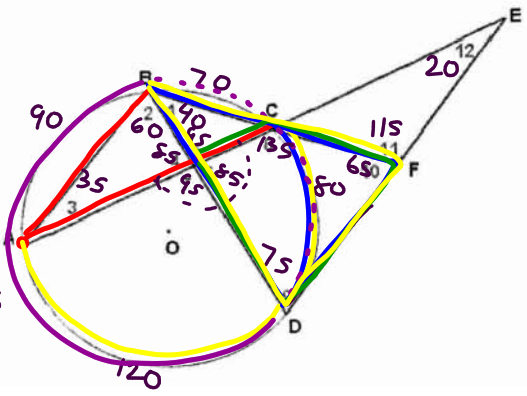
e. m∠ACP



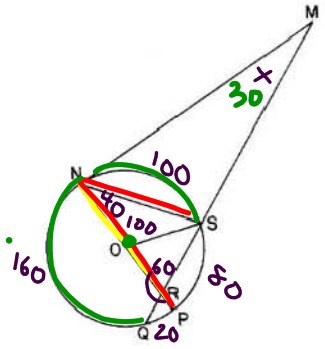
$7x+8x+12x+9x = 360$
$36x = 360$
$x = 10$

2. Circle O with tangent $\overline{DE}$ and $m\widehat{BC} : m\widehat{CD} : m\widehat{AD} : m\widehat{AB} = 7:8:12:9$
Find all of the numbered angles.

1 = 40
2 = 60
3 = 35
4 = 85
5 = 95
6 = 85
7 = 95
8 = 135
9 = 75
10 = $\frac{210-80}{2} = \frac{130}{2} = 65$
11 = 115
12 = 20



3. In circle O, $\overline{MN}$ is a tangent, $\overline{NP}$ is a diameter, $\overline{MQ}$ is a secant, $\overline{OS}$ is a radius, m$\widehat{QN}$ = 160, and m∠PNS=40



m$\widehat{QP}$ = 20

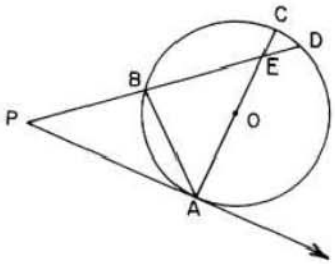
m$\widehat{PS}$ = 80

→ m∠QRP = 60

m∠NOS = 100

m∠M = 30

4. In the accompanying diagram, $\overrightarrow{PA}$ is a tangent to circle O at point A, secant $\overline{PBD}$ intersects diameter $\overline{AC}$ at point E, m∠P = 40, and m$\widehat{CD}$: m$\widehat{DA}$ = 1 : 8.



m$\widehat{AD}$ =

m$\widehat{CD}$ =

m<BEA =

m<BAC =

m<PBA =