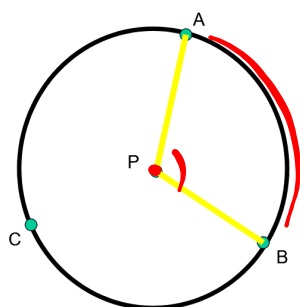


Good morning!

1. "Here"
2. Notes on Inside/Outside Angles
3. Review for tomorrow's quiz
4. Upload Practice p. 18-19 to CTLS



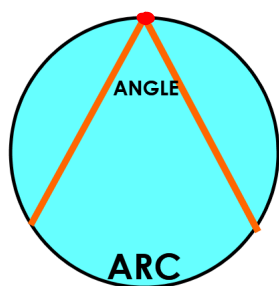
Case I: Vertex is **AT** the center



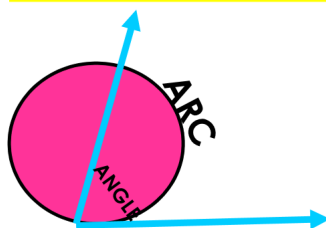
Central
SAME

ANGLE = ARC

Case II: Vertex is ON circle



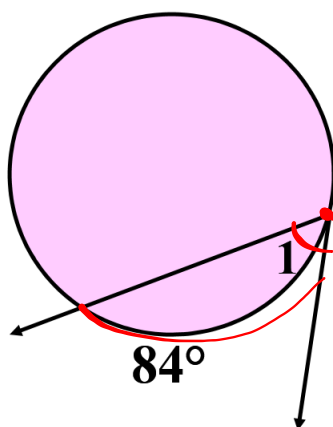
$$\text{ANGLE} = \frac{\text{ARC}}{2}$$



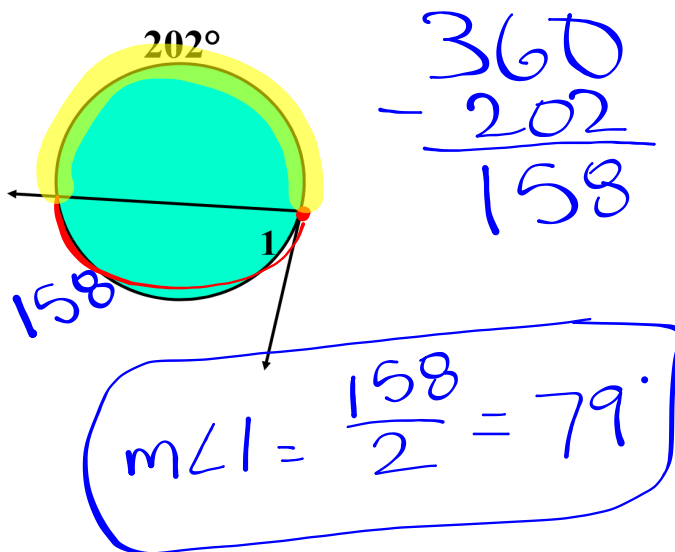
Inscribed = $\frac{\text{arc}}{2}$

Ex. 1 Find $m\angle 1$.

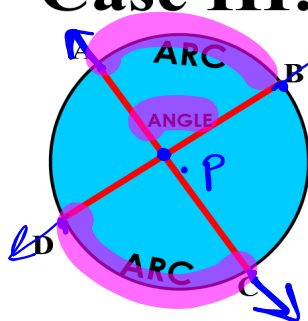
$$\text{Inscribed } \angle = \frac{\text{arc}}{2}$$
$$m\angle 1 = \frac{84}{2} = 42^\circ$$



Ex. 2 Find $m\angle 1$.



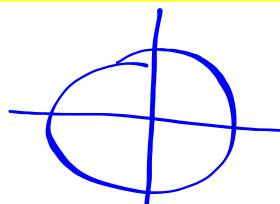
Case III: Vertex is **INSIDE** circle



$$\angle \text{Inside} = \frac{\text{arc} + \text{arc}}{2}$$



Secant
lines



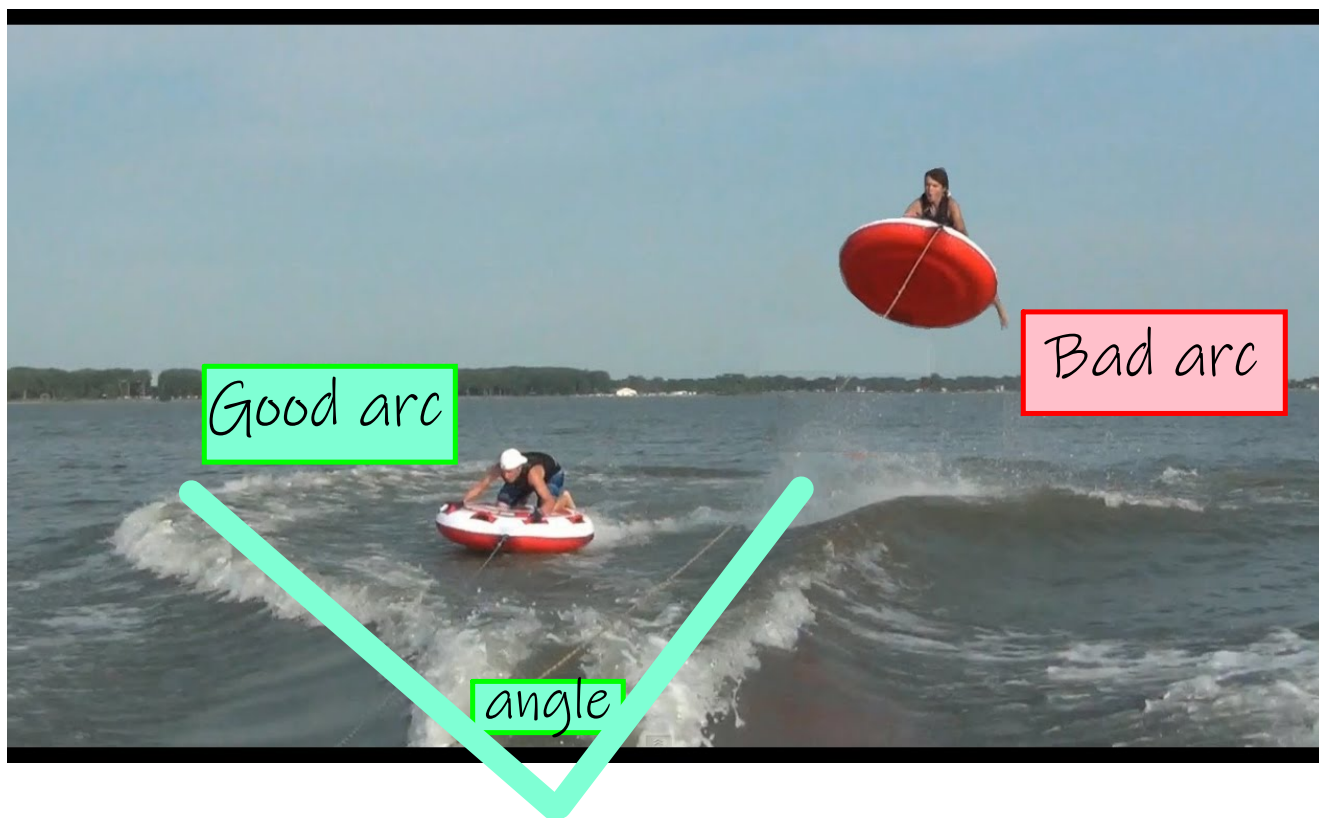
Looks like a PLUS sign!



Inside the
wake :)

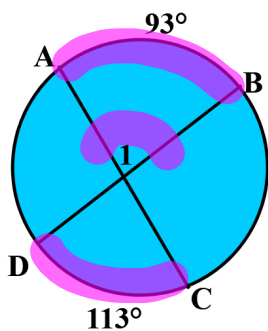


Outside
the
wake :(



Ex. 3 Find $m\angle 1$.

"Half the Sum"



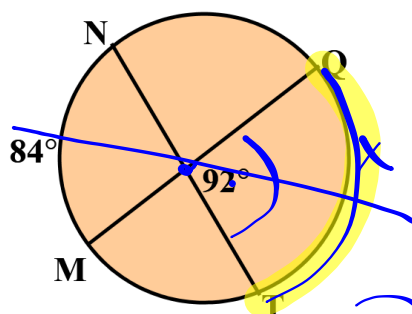
\angle inside = $\frac{\widehat{arc\ AB} + \widehat{arc\ CD}}{2}$

$$m\angle 1 = \frac{93 + 113}{2}$$

$$m\angle 1 = 103^\circ$$

Ex. 4 Find $m\widehat{QT}$.

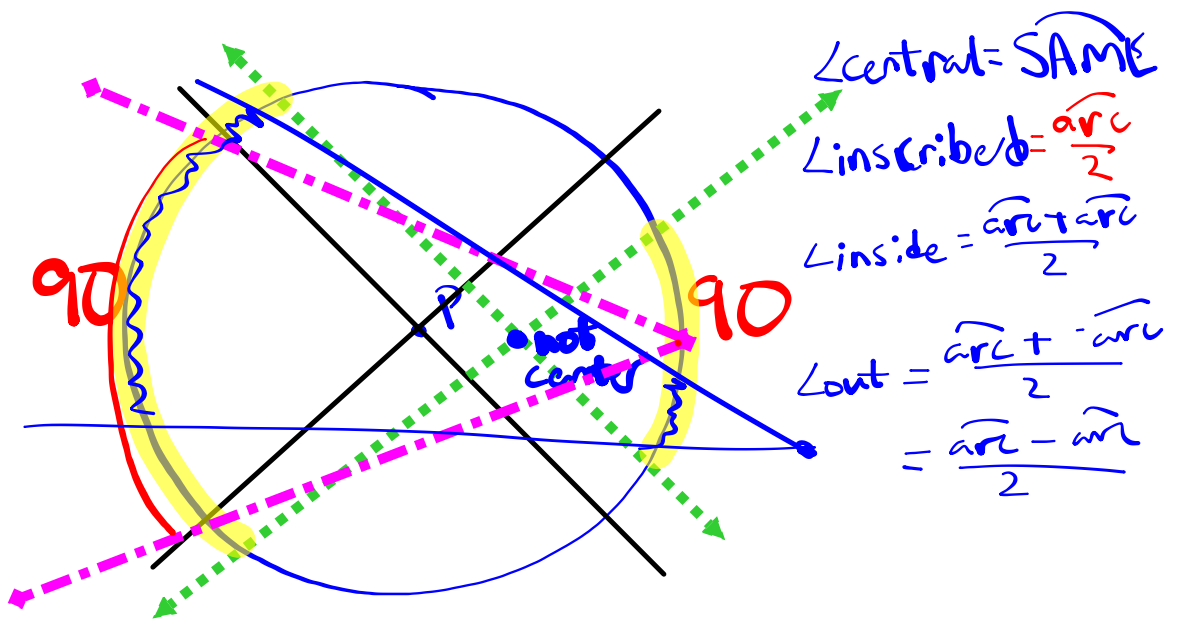
$$m\widehat{QT} = 100$$



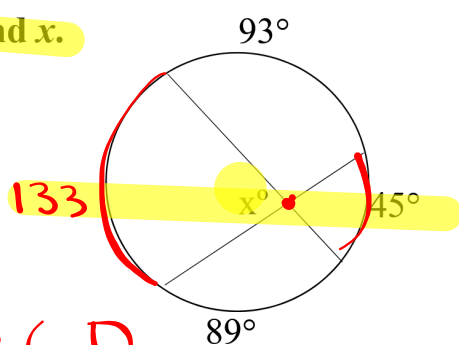
$$\angle \text{inside} = \frac{\widehat{arc} + \widehat{arc}}{2}$$

$$2 \cdot 92 = \frac{84 + x}{2} \cdot 2$$

$$\begin{array}{r} 184 = 84 + x \\ -84 \quad -84 \\ \hline 100 = x \end{array}$$



Ex. 5 Find x.



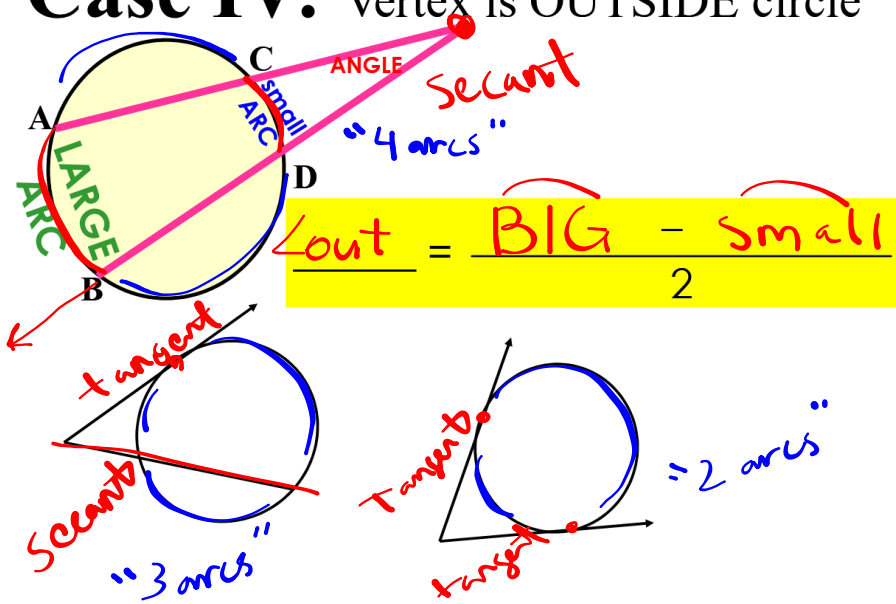
$$\begin{array}{r}
 360 \\
 - 93 \\
 - 45 \\
 - 89 \\
 \hline
 133
 \end{array}$$

$$\angle \text{inside} = \frac{\text{arc} + \text{arc}}{2}$$

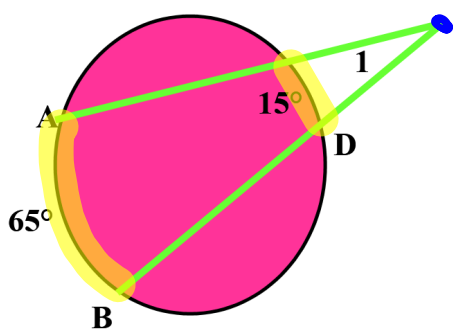
$$x = \frac{133 + 45}{2}$$

$$x = 89^\circ$$

Case IV: Vertex is OUTSIDE circle



Ex. 6 Find $m\angle 1$. ✓

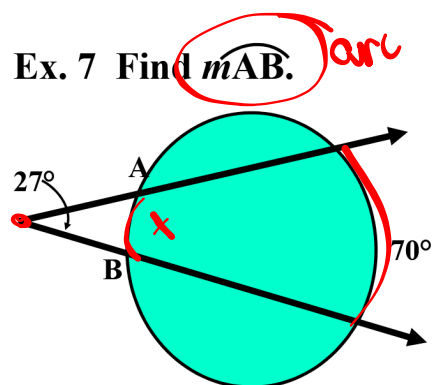


$$\angle_{out} = \frac{\widehat{BAC} - \widehat{small}}{2}$$

$$m\angle 1 = \frac{65 - 15}{2}$$

$$m\angle 1 = \frac{40}{2}$$

$m\angle 1 = 20^\circ$



124°
 16°

$$\angle_{out} = \frac{\widehat{Big} - \widehat{small}}{2}$$

$$2 \cdot 27 = \frac{70 - x}{2} \cdot 2$$

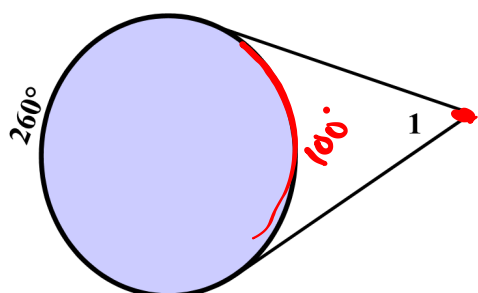
$$54 = 70 - x$$

$$-70 \quad -70$$

$$+16 = +x$$

$$\boxed{x = 16^\circ}$$

Ex. 8 Find $m\angle 1$.



$$\begin{array}{r} 360 \\ - 260 \\ \hline 100 \end{array}$$

$$\text{Lout} = \frac{|\text{Big} - \text{Small}|}{2}$$

$$m\angle 1 = \frac{260 - 100}{2}$$

$$m\angle 1 = \frac{160}{2}$$

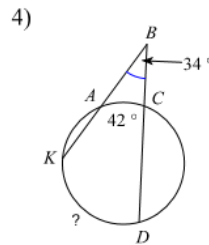
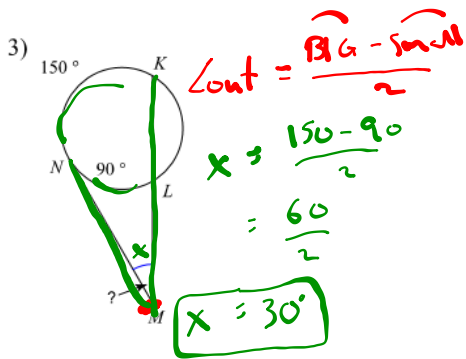
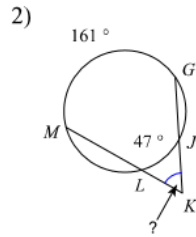
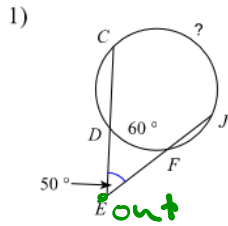
$$m\angle 1 = 80^\circ$$

Geometry Name _____ ID: 1
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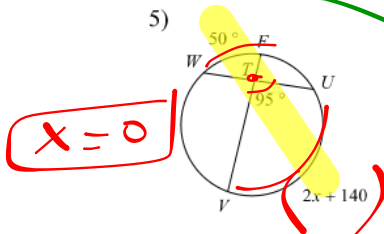
Angles in Circles

Date _____ Period _____

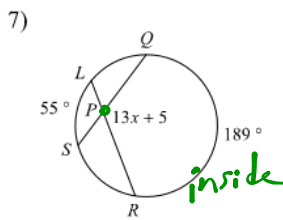
Find the measure of the arc or angle indicated. Assume that lines which appear tangent are tangent.



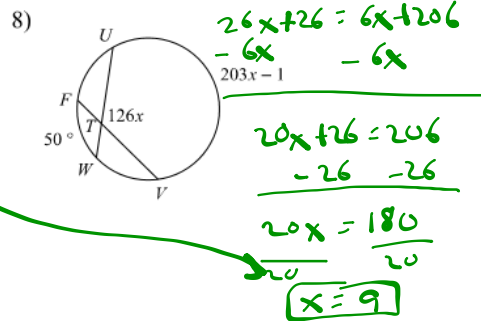
Solve for x. Assume that lines which appear tangent are tangent.



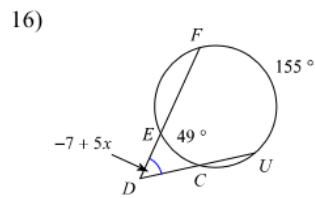
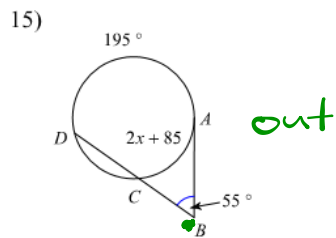
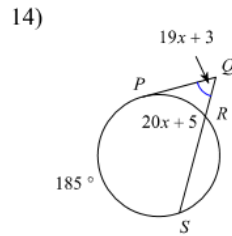
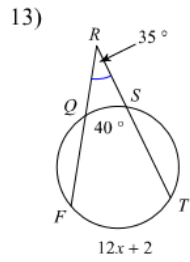
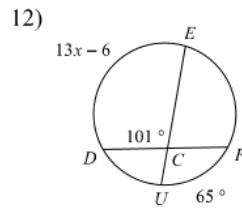
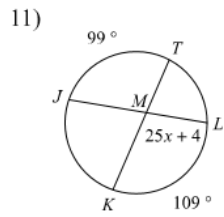
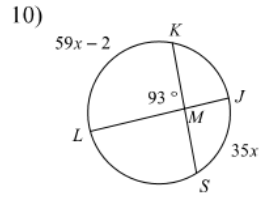
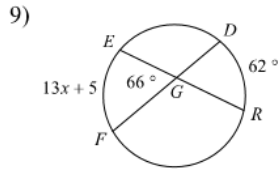
Handwritten notes for problem 5:
 $\angle_{inside} = \frac{arc WU}{2}$
 $95 = \frac{50 + (2x + 140)}{2}$
 $190 = 50 + 2x + 140$
 $190 = 190 + 2x$
 $0 = 2x$
 $x = 0$

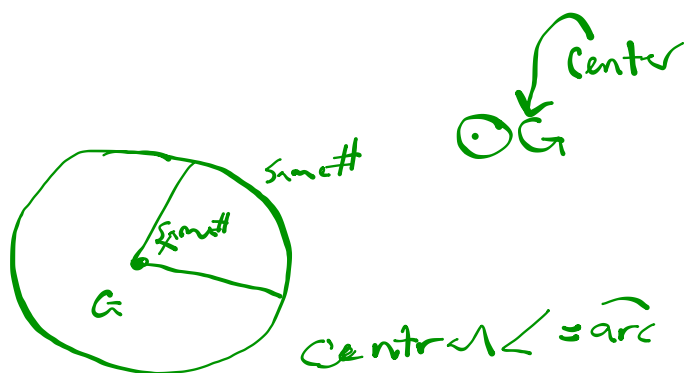


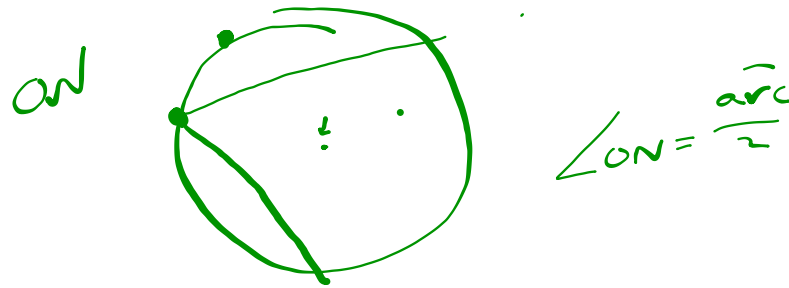
Handwritten notes for problem 7:
 $\angle_{inside} = \frac{arc QR}{2}$
 $26x + 26 = \frac{55 + (13x + 5)}{2}$
 $26x + 26 = \frac{60 + 13x}{2}$
 $52x + 52 = 60 + 13x$
 $39x = 8$
 $x = \frac{8}{39}$

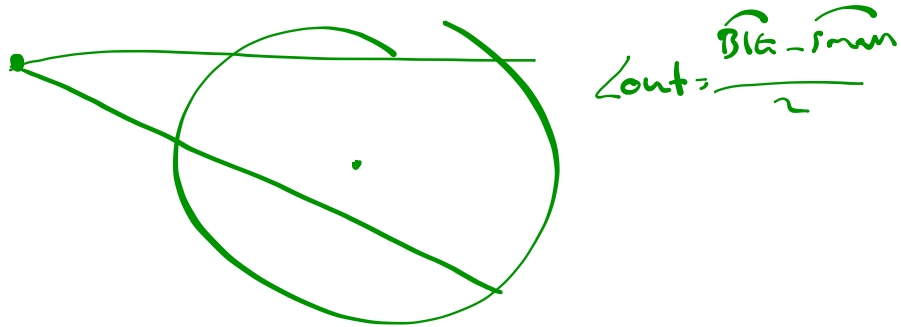


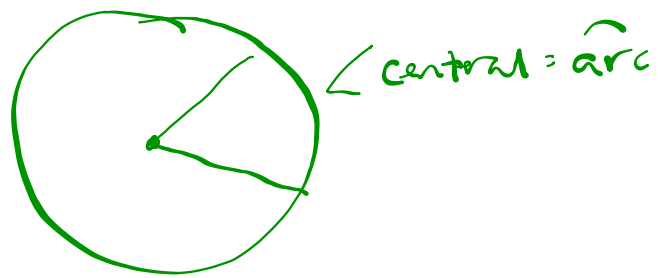
Handwritten notes for problem 8:
 $\angle_{inside} = \frac{arc WV}{2}$
 $203x - 1 = \frac{50 + 126x}{2}$
 $406x - 2 = 50 + 126x$
 $280x = 52$
 $x = \frac{13}{70}$

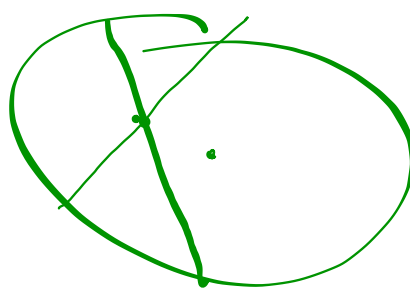




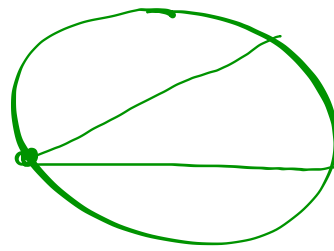








$$\angle \text{outside} = \frac{\widehat{\text{arc}} + \widehat{\text{arc}}}{2}$$



$$\angle ON = \frac{arc}{2}$$

Quiz Review

Section 1: Vocabulary

Fill in the blank with the appropriate term. There is a word bank below.

- 1) A circle is the set of all points equidistant from a given point, called the center.
- 2) The distance from the center point to a point on the circle is called the radius.
- 3) When a line intersects a circle in two places, it is called a secant line.
- 4) When a line intersects a circle in exactly one place, it is called a tangent line.
- 5) The diameter is double the length of the radius.
- 6) The a chord that goes through the center point of the circle will be the longest chord in that circle, its called the diameter.

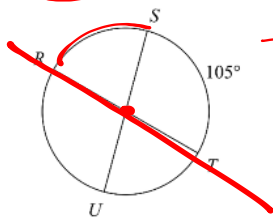
Word bank, the term can only be used on time. Not all terms will be used: Radius, diameter, chord, secant, tangent, circle, circumference, double, half.

FORMULA:
 $m\text{Central Angle} = m\text{Arc}$

Section 2: Central angles.

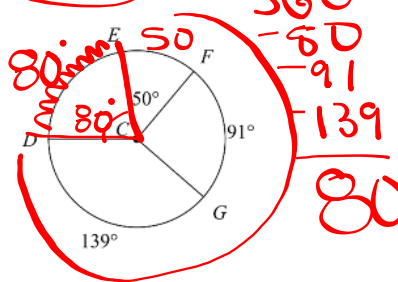
Find the Measure of the requested arc or angle

7) $m\widehat{RS} = 75^\circ$

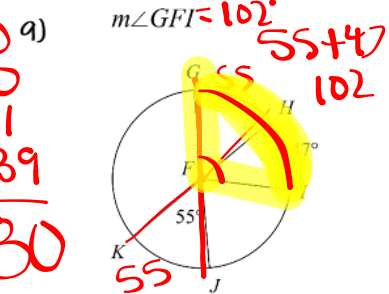


$$\begin{array}{r} 180 \\ - 105 \\ \hline 75 \end{array}$$

8) $m\angle DCE = 80^\circ$

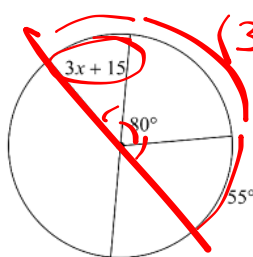


$$\begin{array}{r} 360 \\ - 80 \\ - 91 \\ \hline 139 \end{array}$$

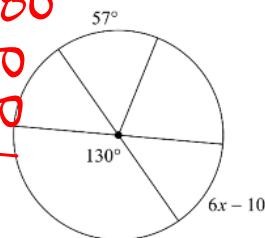


For 10 and 11, solve for x

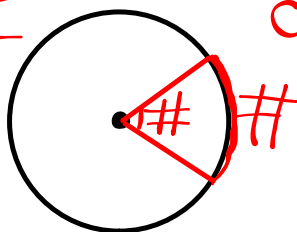
10)



$$\begin{aligned} (3x + 15) + 80 + 55 &= 180 \\ 3x + 150 &= 180 \\ - 150 &- 150 \\ \hline 3x &= 30 \\ \frac{3x}{3} &= \frac{30}{3} \\ \hline \boxed{x = 10} \end{aligned}$$



Central Angle vertex at center
"SAME"
central $\angle = \widehat{\text{arc}}$

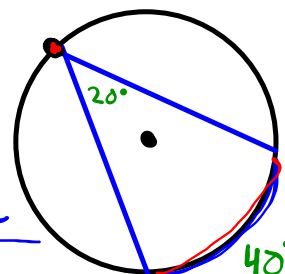


Inscribed Angles

"Inscribed: On the side"

$$\text{inscribed } \angle = \frac{\widehat{\text{arc}}}{2}$$

$$\text{-OR- } 2(\text{inscribed } \angle) = \widehat{\text{arc}}$$

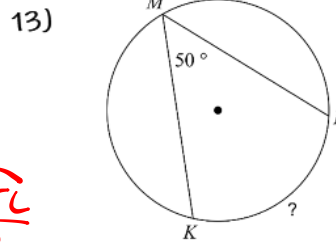
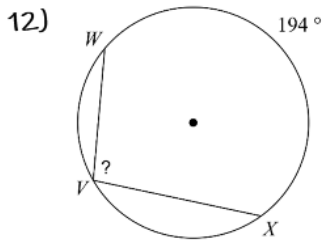


Section 3: Inscribed Angles and Inscribed Polygons

FORMULA:

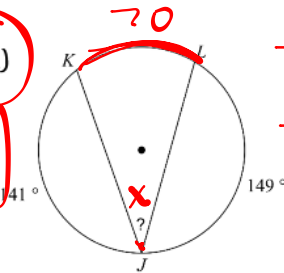
$$m\text{Inscribed Angle} = \frac{m\text{Arc}}{2}$$

Find the measure of the requested angle or arc.



12)

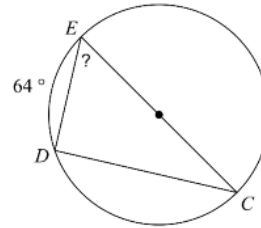
$x = 35$



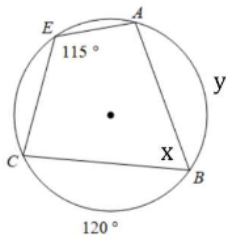
$$\begin{aligned} \angle ON &= \frac{\text{arc}}{2} \\ &= \frac{70}{2} \\ &= 35 \end{aligned}$$

$$\begin{array}{r} 360 \\ - 141 \\ - 149 \\ \hline 70 \end{array}$$

13)



14) Solve for x and y



15) Solve for x:

