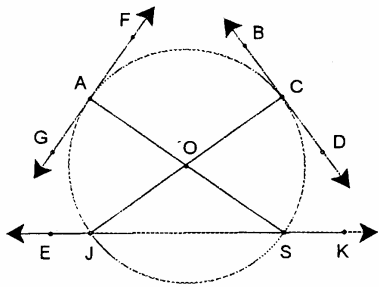


Write in a neat and organized fashion. Use a pencil. Show all work to get credit.

1. In the given figure, name:

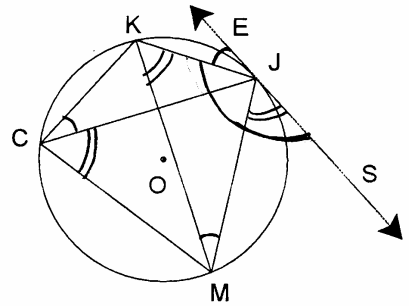


- a) four radii $\overline{OA}, \overline{OB}, \overline{OS}, \overline{OJ}$
- b) two diameters $\overline{AS}, \overline{CJ}$
- c) three chords $\overline{JS}, \overline{JC}, \overline{AS}$
- d) two tangents $\overleftrightarrow{GF}, \overleftrightarrow{BD}$
- e) one secant \overleftrightarrow{EK}

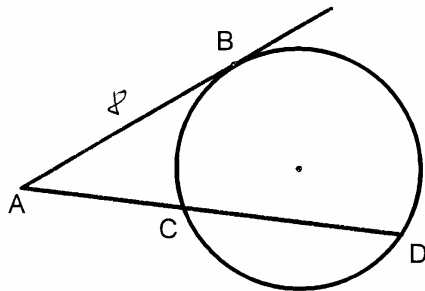
2. Use the figure to answer the questions.

Given $\odot O$
 tan \overline{ES}

- a) Name two angles congruent to $\angle KJE$.
 $\angle KCJ$ and $\angle KMJ$
- b) Name two angles congruent to $\angle JCM$.
 $\angle JKM$ and $\angle SJM$
- c) Name three angles supplementary to $\angle KJS$.
 $\angle KJE, \angle KCJ, \angle KMJ$
- d) Name one angle supplementary to $\angle KCM$.
 $\angle KJM$



3.



Given: \overline{AB} tangent to the circle at B
 $AB=8, AD=12$

Find: AC

Solution

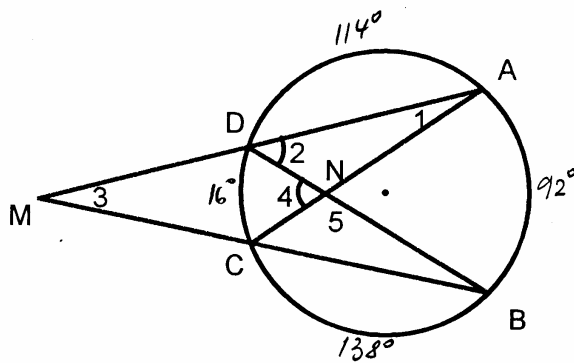
$$AB^2 = AC \cdot AD$$

$$8^2 = AC \cdot 12$$

$$AC = \frac{64}{12} = \frac{16}{3}$$

$$\boxed{AC = \frac{16}{3}}$$

4.



Given: $m\widehat{AB} = 92^\circ$ $m\widehat{DA} = 114^\circ$
 $m\widehat{BC} = 138^\circ$

Find: $m\angle 1$ ($\angle DAC$)
 $m\angle 2$ ($\angle ADB$)
 $m\angle 3$ ($\angle AMB$)
 $m\angle 4$ ($\angle DNC$)
 $m\angle 5$ ($\angle CNB$)

$m\angle 1 = 8^\circ$
 $m\angle 2 = 46^\circ$
 $m\angle 3 = 38^\circ$
 $m\angle 4 = 54^\circ$
 $m\angle 5 = 126^\circ$

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

$$m\widehat{CD} = 360^\circ - (m\widehat{AD} + m\widehat{AB} + m\widehat{BC})$$

$$= 360^\circ - 344^\circ = 16^\circ$$

$$m\angle 1 = \frac{1}{2}(16^\circ) = 8^\circ$$

$$m\angle 2 = \frac{1}{2} m\widehat{AB} = \frac{1}{2}(92^\circ) = 46^\circ$$

$$m\angle 3 = \frac{1}{2} (m\widehat{AB} - m\widehat{CD}) = \frac{1}{2} (92^\circ - 16^\circ) = 38^\circ$$

$$m\angle 4 = \frac{1}{2} (m\widehat{AB} + m\widehat{CD}) =$$

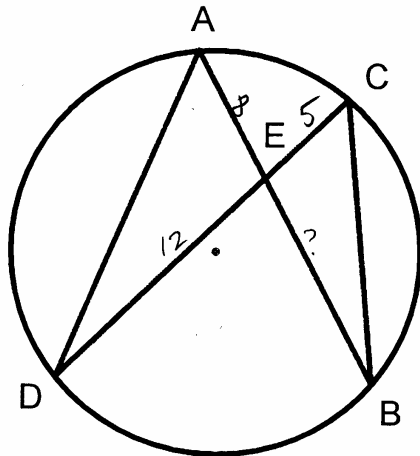
$$= \frac{1}{2} (92^\circ + 16^\circ) = 54^\circ$$

$$m\angle 5 = 180^\circ - m\angle 4$$

$$= 180^\circ - 54^\circ$$

$$= 126^\circ$$

5.



Given: $DE = 12$, $EC = 5$, $AE = 8$

Find: EB .

Solution

$$AE \cdot EB = CE \cdot ED$$

$$8 \cdot EB = 5 \cdot 12$$

$$EB = \frac{5 \cdot 12}{8} = \frac{15}{2}$$

$$EB = \frac{15}{2}$$