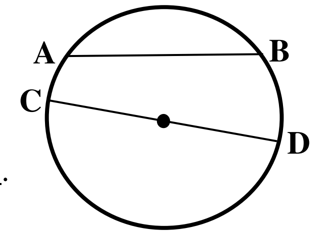
Geometry Note-Taking Guide **Name:**_________________________

Section 9.2 – Chords and Their Properties **Note:** Chapter structured differently from book.

In the diagram , segment $\overline{AB}$ with endpoints on the circle is called a ________________.

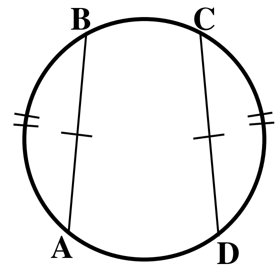
Segment $\overline{CD}$ is both a ______________ and a __________________.



Chords and Arc Theorem

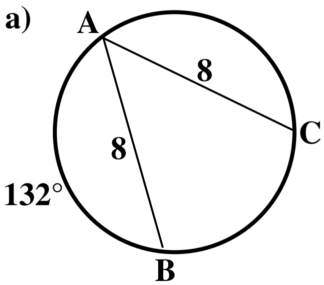
If two chords in a circle are congruent, then their corresponding arcs are congruent and vice versa. .

$$\overset{\frown}{AB} \cong \overset{\frown}{CD} \leftrightarrow \overline{AB} \cong \overline{CD}$$



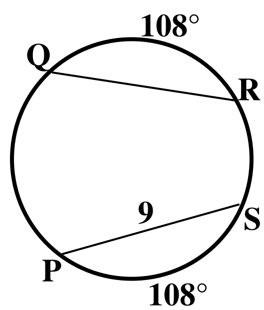
Ex 1:
Find the indicated measure.

a)



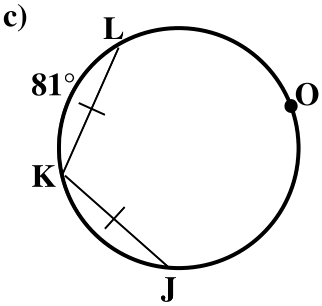
$m\overset{\frown}{AC}$ = _______

b)



QR = _______

c)



$m\overset{\frown}{LOJ}$ = _______

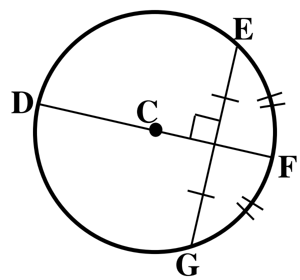
Chords and Perpendicular Bisector Theorem

If one chord is a perpendicular bisector of another chords, then the first chord is a diameter and vice versa.

If $\overline{DF} \perp \overline{EG}$ and $\overline{EH} \cong \overline{HG}$, then $\overline{DF}$ is a diameter.

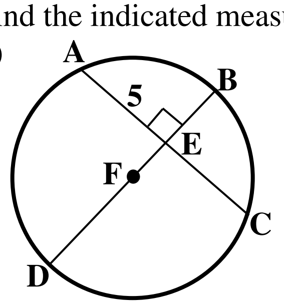
OR

If $\overline{DF}$ is a diameter and $EG \perp DF$, then $\overline{EH} \cong \overline{HG}$.



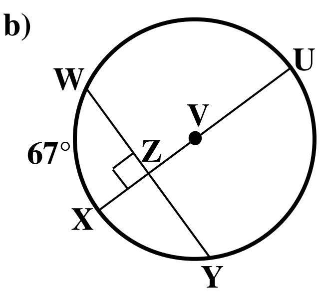
Ex 2:
Find the indicated measure.

a)



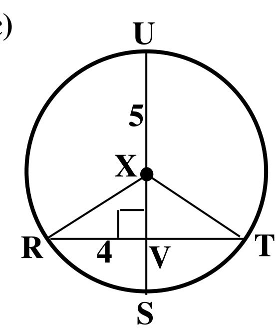
EC = _______

b)



$m\overset{\frown}{WXY}$ = _______

c)

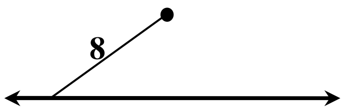


XV = _______

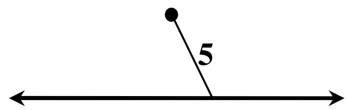
The distance from a point to a line is the length of the ________________________ segment from the point to the line.

Ex:

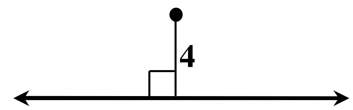
NO



NO



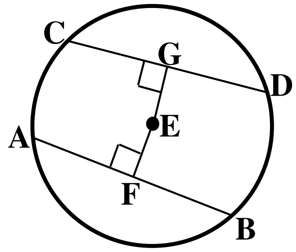
YES



The distance from the point to the line is 4 units.

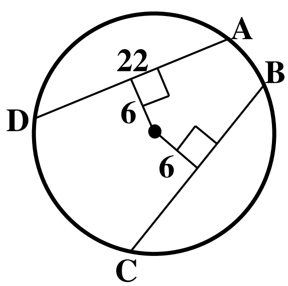
Chords and Distance Theorem
Two chords are congruent if they are equidistant from the center of a circle and vice versa.

$\overline{AB} \cong \overline{CD} \leftrightarrow EF = EG$



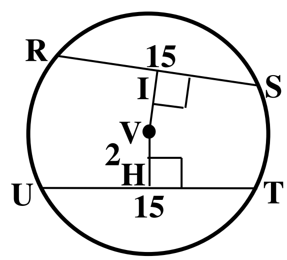
Ex 3:
Find the indicated measure.

a)



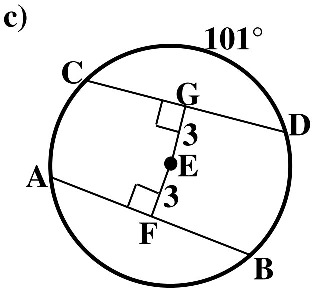
CB = ________

b)



VI = _________

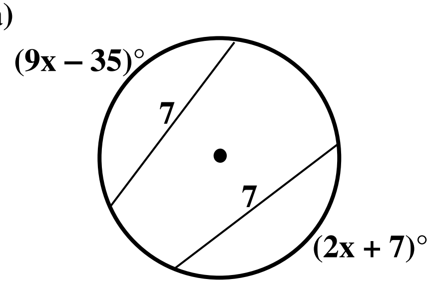
c)



$m\overset{\frown}{AB}$ = ________

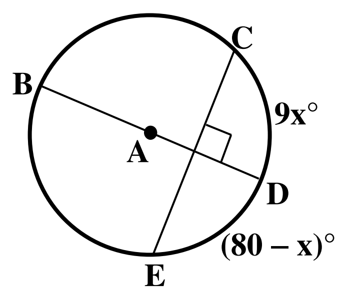
Ex 4:
Find the value of the variable.

a)



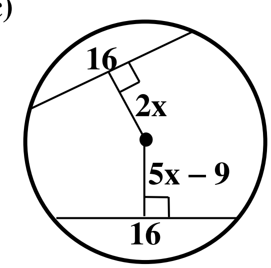
x = _________

b)



x = _________

c)



x = _________