

Name: \_\_\_\_\_ # \_\_\_\_\_

Geometry: Period \_\_\_\_\_

Ms. Pierre

Date: \_\_\_\_\_

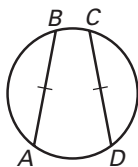
## Properties of Chords

### Today's Objective

SWBAT use the arcs and chords in a circle to find the measure of arcs and the length of segments.

#### THEOREM

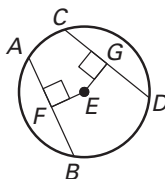
In the same circle, or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.



$\widehat{AB} \cong \widehat{CD}$  if and only if  $\underline{\hspace{1cm}} \cong \underline{\hspace{1cm}}$ .

#### THEOREM

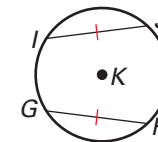
In the same circle, or in congruent circles, two chords are congruent if and only if they are equidistant from the center.



$\overline{AB} \cong \overline{CD}$  if and only if  $\underline{\hspace{1cm}} = \underline{\hspace{1cm}}$ .

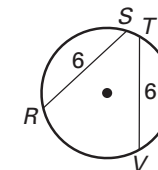
### Example 1

Use the diagram of  $\odot K$  to the right.



- If  $m\widehat{GH} = 100^\circ$ , find  $m\widehat{IJ}$
- If  $m\widehat{GI} = 55^\circ$ , and  $m\widehat{HJ} = 115^\circ$ , find  $m\widehat{GH}$ .
- If  $m\widehat{IJ} = 85^\circ$ , and  $m\widehat{HJ} = 120^\circ$ , find  $m\widehat{GI}$ .

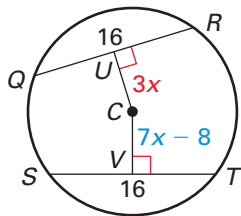
### Check for Understanding



- If  $m\widehat{TV} = 121^\circ$ , find  $m\widehat{RS}$
- If  $m\widehat{ST} = 18^\circ$ , and  $m\widehat{RV} = 134^\circ$ , find  $m\widehat{TV}$ .
- If  $m\widehat{RS} = 103^\circ$ , and  $m\widehat{RV} = 129^\circ$ , find  $m\widehat{ST}$ .

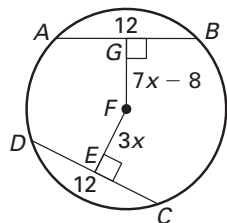
### Example 2

In the diagram of  $\odot C$ ,  $\overline{QR} \cong \overline{ST} = 16$ . Find  $\overline{CU}$ .



### ☑ Check for Understanding

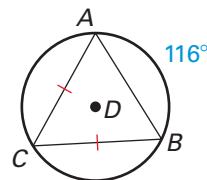
In the diagram of  $\odot F$ ,  $\overline{AB} \cong \overline{CD} = 12$ . Find  $\overline{EF}$ .



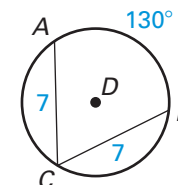
### Guided Practice

Find the measure of the given arc or chord.

1.  $m\widehat{BC}$

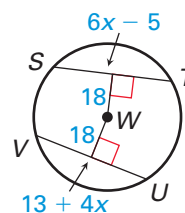


2.  $m\widehat{AC}$

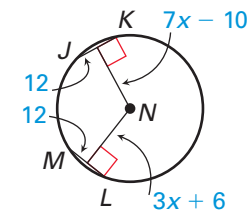


Find the value of  $x$ .

3.



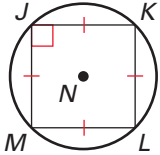
4.



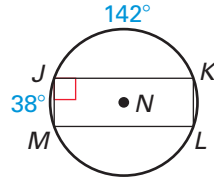
## Independent Practice

Find the measure of the given arc or chord.

1.  $m\widehat{LM}$

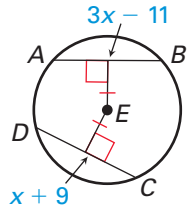


2.  $m\widehat{KLM}$

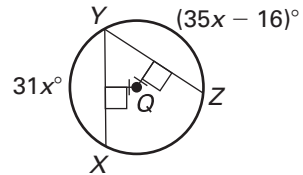


Find the value of  $x$ .

3.



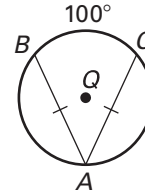
4.



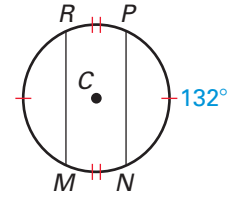
## Home Work

Find the given measure.

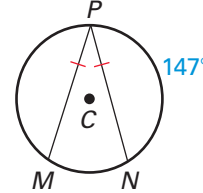
1.  $m\widehat{AB}$



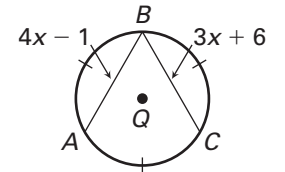
2.  $m\widehat{RP}$



3.  $m\widehat{MN}$

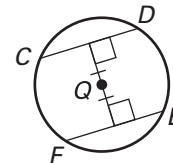


4.  $m\widehat{AC}$

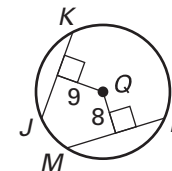


Tell whether the lengths are equal.

3.  $CD$  and  $EF$



4.  $JK$  and  $LM$



5.  $TQ$  and  $UQ$

