

Name \_\_\_\_\_

Geometry Extended

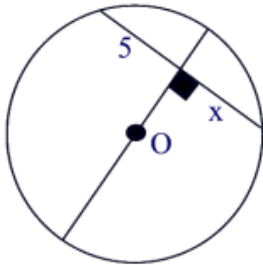
**Worksheet #97**

**How to work with Perpendicular Chords**

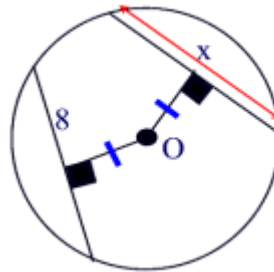
- In a circle, if a diameter is perpendicular to a chord, then it bisects a chord and its arc.
- In a circle, two chords are congruent if and only if they are equidistant from the center.

**Examples:**

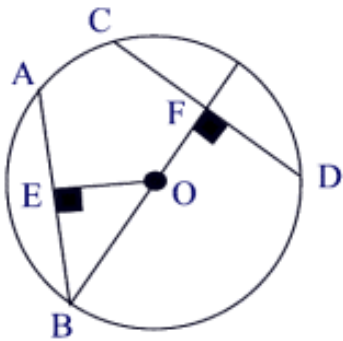
1. Find  $x$ :



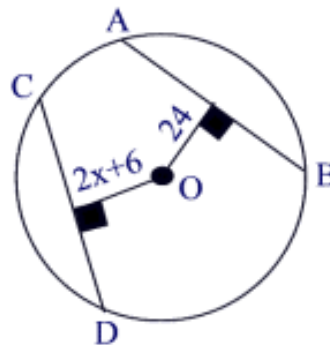
2. Find  $x$ :



3. Given:  $CD = 16$ ,  $AB = 16$ ,  
 $OB = 10$ , Find  $OF$

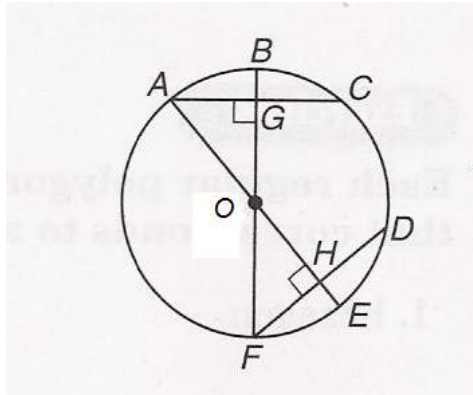


4. Given:  $\overline{AB} \cong \overline{CD}$ , find  $x$



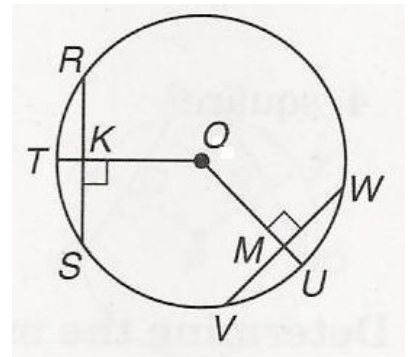
5. If the circle has a diameter of length 40  
and  $AC = FD = 24$ , find:

- $OA =$
- $AG =$
- $OE =$
- $OH =$
- $HE =$
- $FG =$



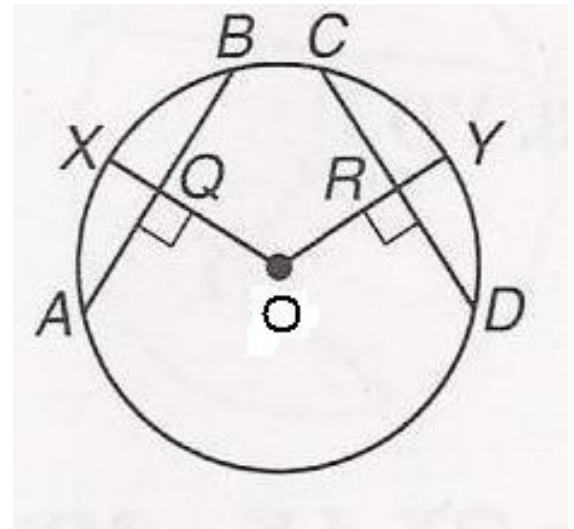
6. In the circle,  $\overline{RS} \cong \overline{VW}$  and  $m\angle RS = 70^\circ$ ,  
find:

- $m\angle RT =$
- $m\angle ST =$
- $m\angle VW =$
- $m\angle VU =$



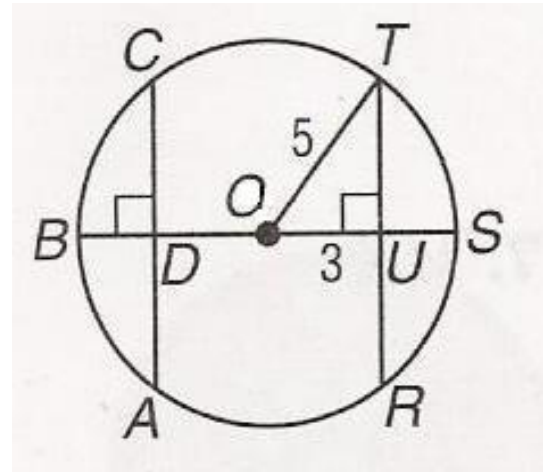
7. In the circle,  $\overline{QO} \cong \overline{RO}$ ,  $CD = 24$  and  $m\angle CY = 45^\circ$ . Find:

- a)  $AB =$
- b)  $RC =$
- c)  $QB =$
- d)  $AQ =$
- e)  $m\angle DY =$
- f)  $m\angle AB =$
- g)  $m\angle AX =$
- h)  $m\angle XB =$
- i)  $m\angle CD =$
- j)  $m\angle ADB =$
- k)  $OR =$       *Hint: Draw OC and OD*



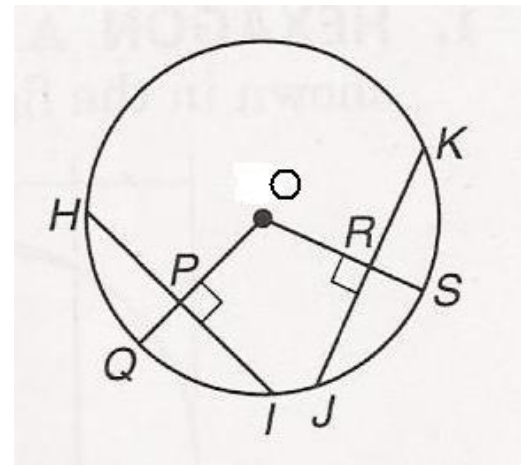
8. In the circle,  $DO = OU$  and  $AC = RT$ . Find:

- a)  $TU =$
- b)  $TR =$
- c)  $SU =$
- d)  $CD =$
- e)  $OB =$
- f)  $BS =$



9. In circle O,  $m\angle HQ = 45^\circ$ ,  $JR = 8$ , and  $\overline{HI} \cong \overline{JK}$ . Find:

- a)  $m\angle HI =$
- b)  $m\angle QI =$
- c)  $m\angle JK =$
- d)  $HI =$
- e)  $PI =$
- f)  $JK =$



10. In circle O,  $LO = MO$ ,  $OY = 35$ , and  $VW = 28$ . Find:

- a)  $YZ =$
- b)  $YM =$
- c)  $MO =$
- d)  $MZ =$
- e)  $LV =$
- f)  $LO =$

