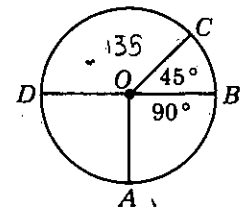


Arcs, Central Angles, and Chords

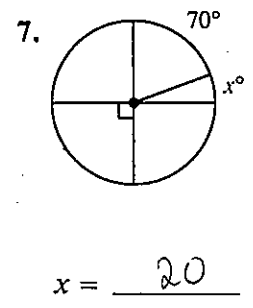
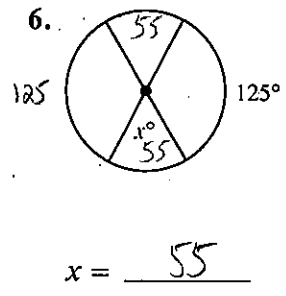
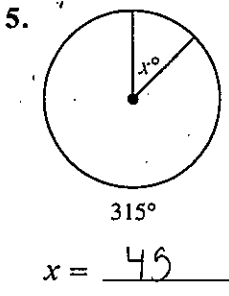
For use after Section 9-4

Exercises 1-4 refer to $\odot O$. Find the measure of each arc.

- 1. \widehat{AB} 90
- 2. \widehat{CD} 135
- 3. \widehat{AC} 135
- 4. \widehat{ADC} 225



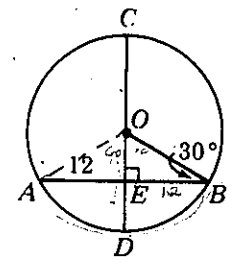
Find the value of x . Each angle shown is a central angle.



- 8. At ten o'clock the hands of a clock form an angle of 60°.
- 9. At seven o'clock the hands of a clock form an angle of 150°.
- 10. If the hands of a clock form an angle of 30°, the time is 11 or 1 o'clock.

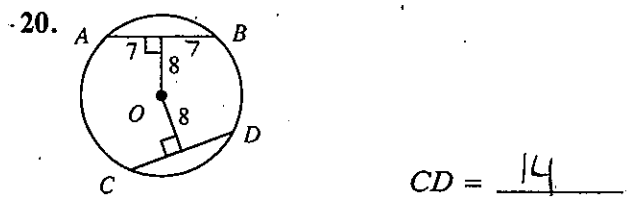
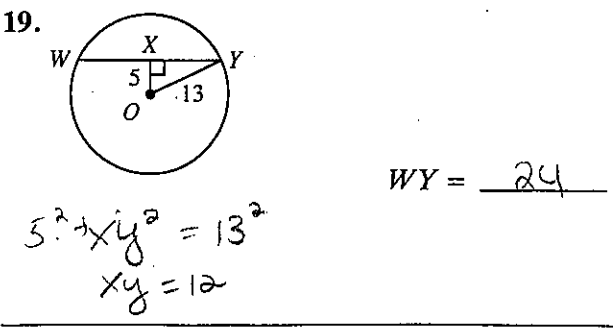
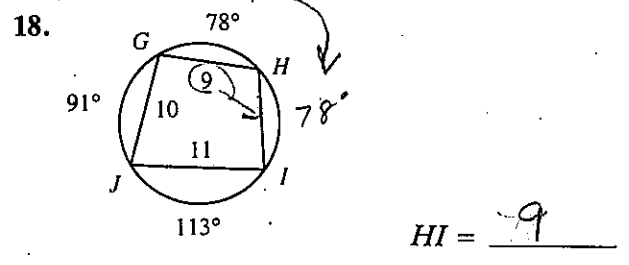
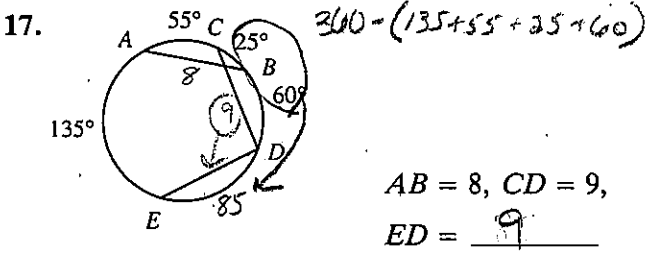
\overline{CD} is a diameter of $\odot O$. Complete.

- 11. $EB = \underline{12}$ $OE = \frac{12}{\sqrt{3}} = 4\sqrt{3}$
- 12. $OB = \underline{8\sqrt{3}}$
- 13. $m\widehat{DB} = \underline{60}$
- 14. $m\widehat{AC} = \underline{120}$
- 15. $m\widehat{AB} = \underline{120}$
- 16. $DE = \underline{4\sqrt{3}}$ (rad) (Shiley)



Exs. 11-16

Complete. In Exercises 19 and 20, O is the center of the circle.

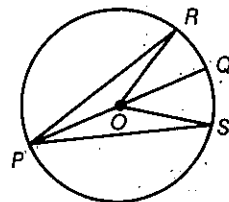


Practice 35

Tangents, Arcs, and Chords

Lessons 9-1 through 9-4

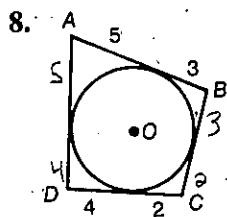
Refer to circle O and complete the following.



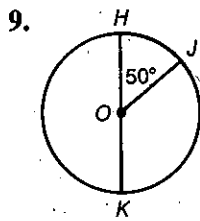
Exs. 1-7

- If $PQ = 10$, then $OP = \underline{5}$.
- Three chords shown in the figure are \overline{PR} , \overline{PQ} , and \overline{PS} .
- A line in the plane of $\odot O$ and perpendicular to \overline{PQ} at P is a tangent of $\odot O$.
- If points E, F , and G lie on $\odot O$, then $\triangle EFG$ is an inscribed (inscribed/circumscribed) triangle.
- If $m\angle ROQ = 28$ and $m\angle QOS = 30$, then $m\widehat{RS} = \underline{58}$.
- If $\angle ROQ \cong \angle QOS$, then \widehat{RQ} and \widehat{QS} are congruent arcs.
- If $\angle ROP \cong \angle SOP$, then \overline{RP} and \overline{SP} are congruent chords.

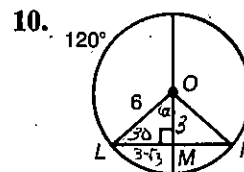
In Exercises 8-10, find the indicated values. O is the center of each circle.



$AD = \underline{9}$
 $BC = \underline{5}$

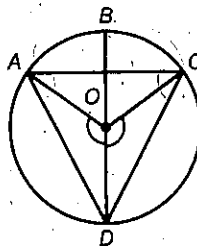


$m\widehat{JK} = \underline{130}$
 $m\widehat{HKJ} = \underline{310}$



$LM = \underline{3\sqrt{3}}$

11. Given: $\odot O$ with $\angle AOD \cong \angle COD$
 Prove: $\widehat{AB} \cong \widehat{BC}$



- $\angle AOD \cong \angle COD$
 - $m\angle BOC + m\angle COD = 180$
 $m\angle BOA + m\angle AOD = 180$
 - $\angle BOC$ is supp. to $\angle COD$
 $\angle BOA$ is supp. to $\angle AOD$
 - $\angle AOB \cong \angle BOC$
 - $\widehat{AB} \cong \widehat{BC}$
- Given
 - \angle add'n post.
 - def. supp.
 - 2 \angle 's supp. to $\cong \angle \cong$
 - \cong central \angle 's $\rightarrow \cong$ arcs