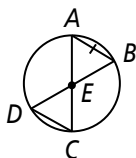
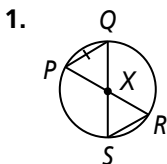


Practice

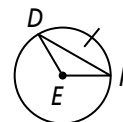
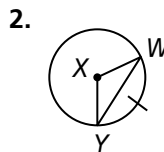
Form G

Chords and Arcs

In Exercises 1 and 2, the $\odot X \cong \odot E$. What can you conclude?

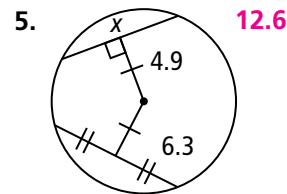
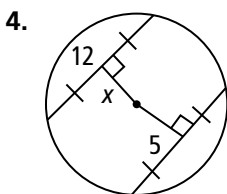
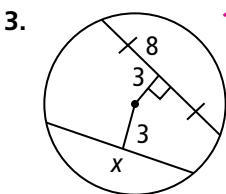


$\angle QXP \cong \angle RXP \cong \angle AEB \cong \angle DEC$; all radii are congruent; all chords drawn are congruent.



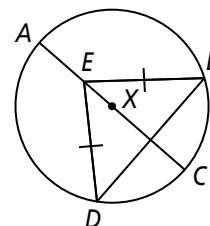
$\angle WXY \cong \angle DEF$; $\overline{WY} \cong \overline{DF}$; all radii are congruent.

Find the value of x .



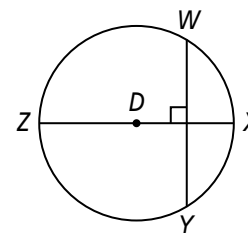
6. In $\odot X$, \overline{AC} is a diameter and $\overline{ED} \cong \overline{EB}$. What can you conclude about \overline{DC} and \overline{CB} ? Explain.

$\overline{DC} \cong \overline{CB}$; because $\overline{ED} \cong \overline{EB}$ and $\overline{XD} \cong \overline{XE}$, \overline{AC} must be a perpendicular bisector of \overline{DB} by the Converse of the Perpendicular Bisector Theorem. This means $\overline{DC} \cong \overline{CB}$, so by Theorem 81, $\overline{DC} \cong \overline{CB}$.

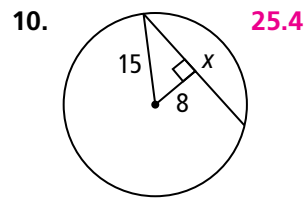
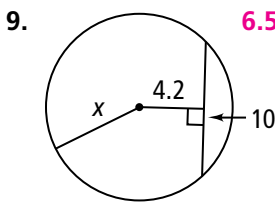
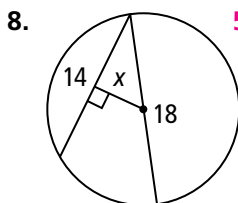


7. In $\odot D$, \overline{ZX} is the diameter of the circle and $\overline{ZX} \perp \overline{WY}$. What conclusions can you make? Justify your answer.

$\overline{WD} \cong \overline{DY}$ because \overline{ZX} is a perpendicular bisector, and $\overline{WX} \cong \overline{XY}$ because of Theorem 83.

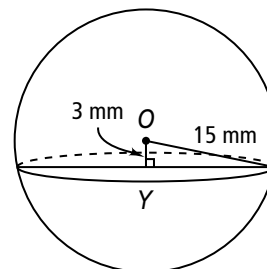


Find the value of x to the nearest tenth.



11. In the figure at the right, sphere O with radius 15 mm is intersected by a plane 3 mm from the center. To the nearest tenth, find the radius of the cross section $\odot Y$.

14.7 mm



Practice (continued)

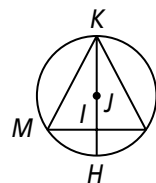
Form G

Chords and Arcs

12. **Given:** $\odot J$ with diameter \overline{HK} ; $\widehat{KL} \cong \widehat{LM} \cong \widehat{MK}$

Prove: $\triangle KIL \cong \triangle KIM$

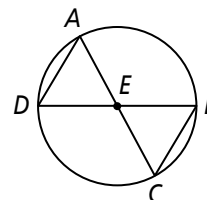
Statements: 1) $\widehat{KL} \cong \widehat{KM}$; 2) $\widehat{KL} \cong \widehat{KM}$; 3) $\widehat{KM} \cong \widehat{KL}$; 4) $\widehat{JM} \cong \widehat{JL}$; 5) \overline{KH} is the \perp bis. of \overline{ML} ; 6) $\widehat{IM} \cong \widehat{IL}$; 7) $\triangle KIL \cong \triangle KLM$; **Reasons:** 1) Refl. Prop. of \cong ; 2) Given; 3) Converse Thm. 81; 4) All radii in a circle are \cong ; 5) Converse of \perp Bis. Thm.; 6) Def. of a bis.; 7) SSS



13. **Given:** \overline{AC} and \overline{DB} are diameters of $\odot E$.

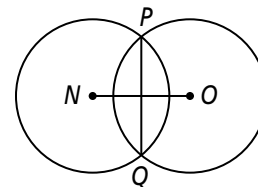
Prove: $\triangle EAD \cong \triangle ECB$

Statements: 1) \overline{AC} and \overline{DB} are diameters of $\odot E$; 2) $\overline{AE} \cong \overline{CE}$ and $\overline{DE} \cong \overline{BE}$; 3) $\angle AED \cong \angle CEB$; 4) $\triangle EAD \cong \triangle ECB$; **Reasons:** 1) Given; 2) Def. of radius; 3) Vert. Angles are \cong ; 4) SAS



$\odot N$ and $\odot O$ are congruent. \overline{PQ} is a chord of both circles.

14. If $NO = 12$ in. and $\overline{PQ} = 8$ in., how long is the radius to the nearest tenth of an inch? **7.2 in.**



15. If $NO = 30$ mm and radius = 16 mm, how long is \overline{PQ} to the nearest tenth of a millimeter? **11.1 mm**

16. If radius = 12 m and $\overline{PQ} = 9$ m, how long is \overline{NO} to the nearest tenth? **22.2 m**

17. **Draw a Diagram** A student draws $\odot X$ with a diameter of 12 cm. Inside the circle she inscribes equilateral $\triangle ABC$ so that \overline{AB} , \overline{BC} , and \overline{CA} are all chords of the circle. The diameter of $\odot X$ bisects \overline{AB} . The section of the diameter from the center of the circle to where it bisects \overline{AB} is 3 cm. To the nearest whole number, what is the perimeter of the equilateral triangle inscribed in $\odot X$? **31 cm**

18. Two concentric circles have radii of 6 mm and 12 mm. A segment tangent to the smaller circle is a chord of the larger circle. What is the length of the segment to the nearest tenth. **20.8 mm**