

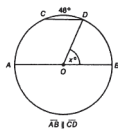
PROOF: Statements	Reasons
1. In $\odot O$ , $\overline{AB}$ is a diameter.	1. Given.
2. Angles $C$ and $D$ are right angles.	2. An angle inscribed in a semicircle is a right angle.
3. Triangles $ABC$ and $BAD$ are right triangles.	3. A triangle that contains a right angle is a right triangle.
4. $\overline{AB} \cong \overline{AB}$ (Hy)	4. Reflexive property of congruence.
5. $\overline{AC} \cong \overline{BD}$ .	5. Given.
6. $\overline{BC} \cong \overline{AD}$ (Leg)	6. In a circle, congruent arcs have congruent chords.
7. $\triangle ACB \cong \triangle BDA$ .	7. Hy-Leg.

The AAS theorem could have been used in the proof of Example 12.23.  
 (A)  $\angle C \cong \angle D$  (Right angles are congruent.)  
 (A)  $\angle ACB \cong \angle BDA$  (Inscribed angles that intercept congruent arcs are congruent.)  
 (S)  $\overline{AB} \cong \overline{AB}$

REVIEW EXERCISES FOR CHAPTER 12

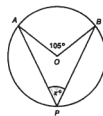
In Exercises 1 to 10, find the value of  $n$ .

1.

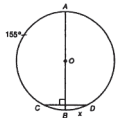


$\overline{AB} \perp \overline{CD}$

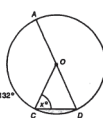
2.



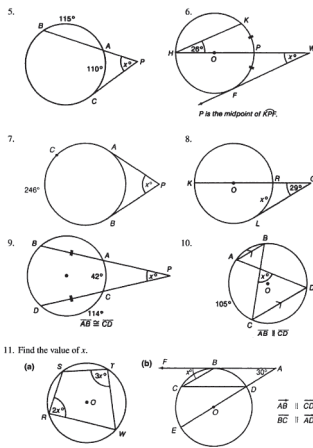
3.



4.



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11. Find the value of  $x$ .

(a)

(b)

12. The length of a chord of a circle is 24 and its distance from the center is 5. Find the length of a diameter of the circle.

13. Tangents  $\overline{AX}$  and  $\overline{AY}$  are drawn to circle  $P$  from an exterior point  $A$ . Radii  $\overline{PX}$  and  $\overline{PY}$  are drawn. If  $m\angle XPY = 74$ , find  $m\angle XAY$ .

14. The length of tangent segment  $\overline{PA}$  drawn from exterior point  $P$  to circle  $O$  is 24. If the radius of the circle is 7, find the distance from point  $P$  to the center of the circle.