EXAMPLE 3 **Find Measures of Angles and Chords**
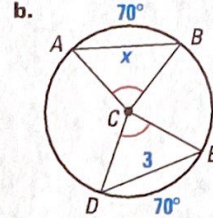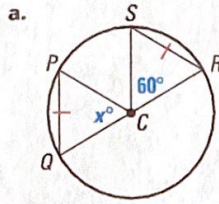
Find the value of *x*.
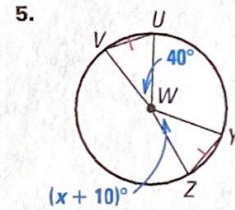
a.

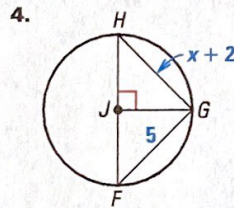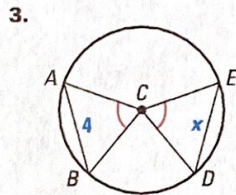

b.

Solution

a. Because $\overline{QP} \cong \overline{RS}$, it follows that $\overparen{QP} \cong \overparen{RS}$.
   So, $m\overparen{QP} = m\overparen{RS} = 60°$, and $x = 60$.

b. Because $\overparen{AB} \cong \overparen{DE}$, it follows that $\overline{AB} \cong \overline{DE}$. So, $x = DE = 3$.

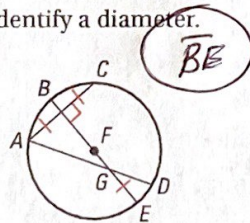**Checkpoint** ✓ **Find Measures of Angles and Chords**

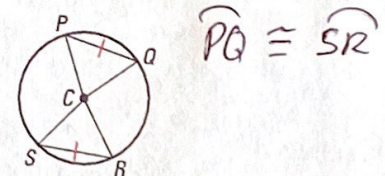Find the value of *x*.

3.

4.

5.

11.4 Exercises

Guided Practice

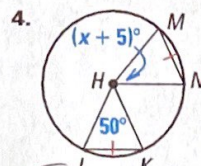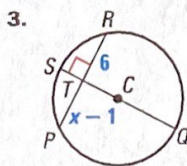**Vocabulary Check**   1. Identify a diameter.

$\overline{BE}$

2. Identify a pair of congruent arcs.

$\overparen{PQ} \cong \overparen{SR}$
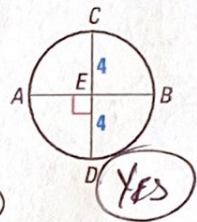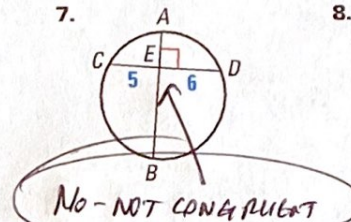

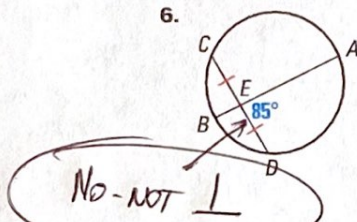
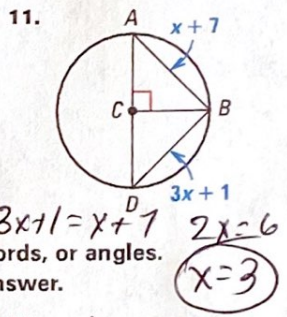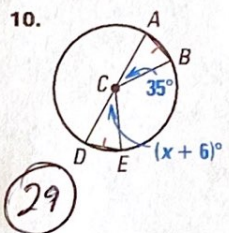**Skill Check**   Find the value of *x*.

7

3.

4.

45

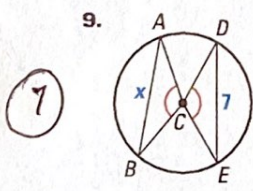5.
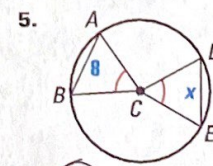
8

Practice and Applications

Extra Practice
See p. 695.

Identifying Diameters Determine whether $\overline{AB}$ is a diameter of the circle. Explain your reasoning.

6.

No - NOT 1

7.

No - NOT CONGRUENT

8.

YES

Finding Chords and Central Angles Find the value of x.

9.

7

10.

29

11.

$3x+1 = x+7$ $2x=6$
x=3

Logical Reasoning Name any congruent arcs, chords, or angles. State a postulate or theorem that justifies your answer.

12.

$\overline{AB} \cong \overline{CB}$
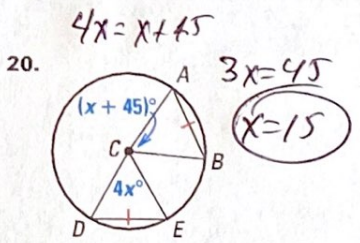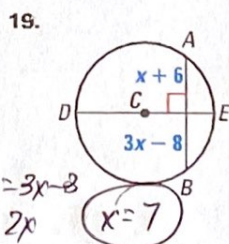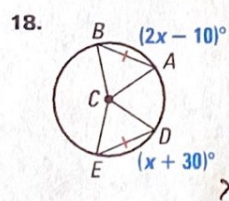
13.

$AB = CD$

14.

$\angle AQB \cong \angle CQD$
$\overarc{AB} \cong \overarc{CD}$
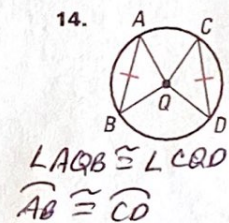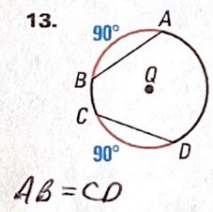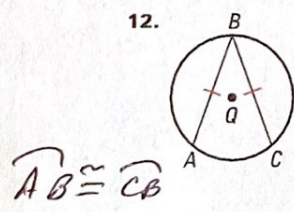
Finding Measures Find the measure of the red segment or arc.

15.

10

16.

40°

17.

110°
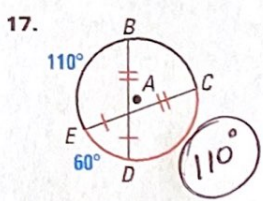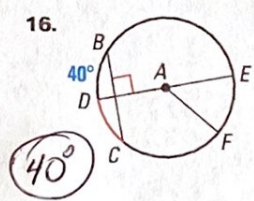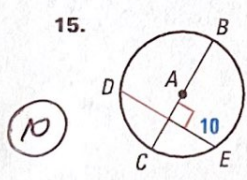
Using Algebra Find the value of x.

$4x = x+45$

$3x=45$

18.

$2x-10 = x+30$
x=40

19.

$x+6 = 3x-8$
$14 = 2x$ **x=7**

20.

x=15

Homework Help

Example 1: Exs. 6–8, 15–20
Example 2: Exs. 21–22
Example 3: Exs. 9–20

21. Visualize It! Draw a large circle and cut it out. Tear part of it off and ask another student to recreate your circle.