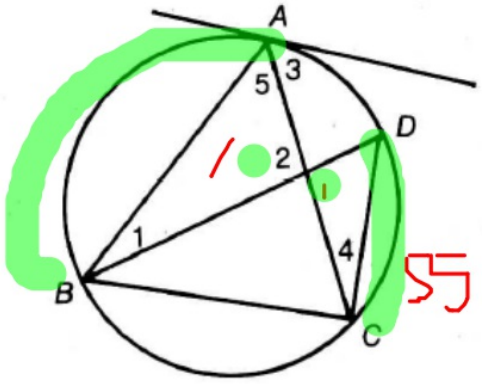
Practice 36
Angles and Segments

Lessons 9-5 through 9-7

Complete the following.

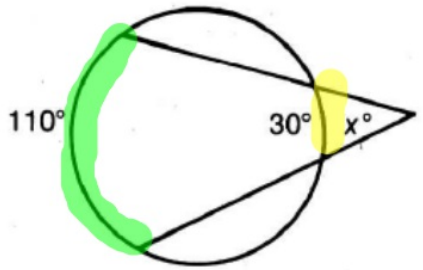
1. If $m\overset{\frown}{AB} = 130$ and $m\overset{\frown}{CD} = 70$, then $m\angle 2 =$ _____.
2. If $m\angle 4 = 26$, then $m\angle 1 =$ _____.
3. If $m\overset{\frown}{AB} = 100$ and $m\overset{\frown}{BC} = 120$, then $m\angle 3 =$ _____.
4. If $\overline{AB} \cong \overline{AC}$ and $m\overset{\frown}{AB} = 130$, then $m\angle 5 =$ _____.
5. If $m\angle 2 = 105$ and $m\overset{\frown}{DC} = 55$, then $m\overset{\frown}{AB} =$ _____.
6. If $\overline{DB}$ is a diameter, then $m\angle BCD =$ _____.



Exs. 1–6

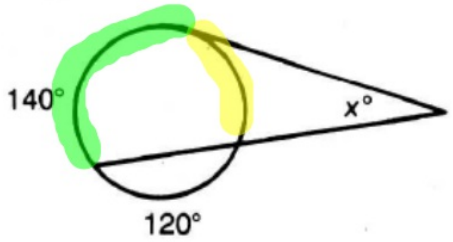
Find the value of x in each of the following circles.

7.



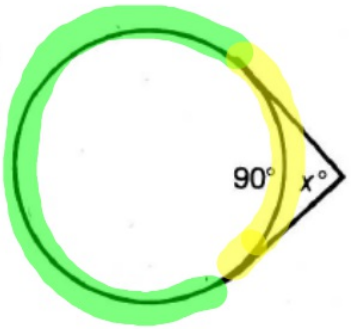
$x =$ _____ $220 = 2x$, $110 = x$

8.



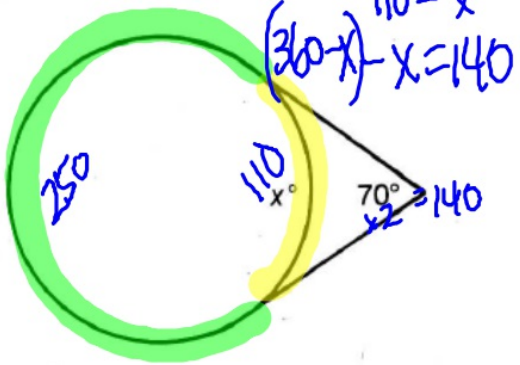
$x =$ _____

9.



$x =$ _____

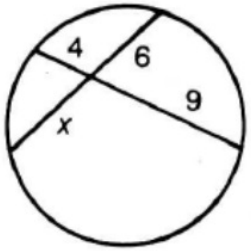
10.



$(360 - x) - x = 140$, $x = 140$

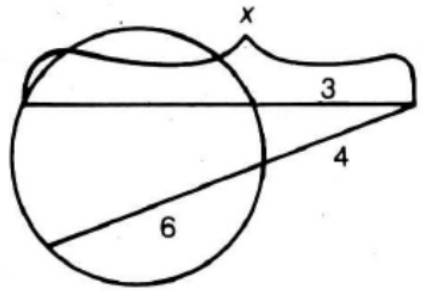
$x =$ _____

11.



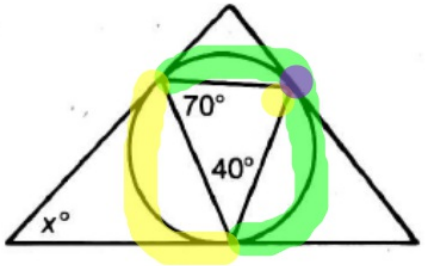
$x =$ _____

12.

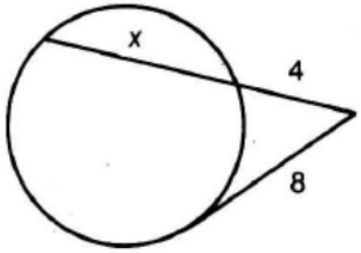


$x =$ _____

13.



14.



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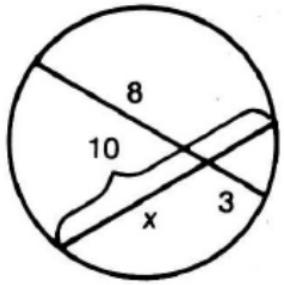
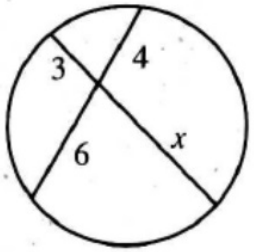


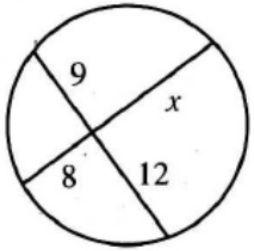
Chords, secants, and tangents are shown. Find the value of x. In Exercise 8, O is the center of the circle.

1.



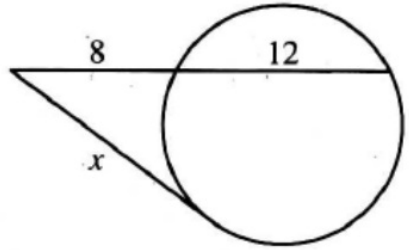
$x =$ _____

2.



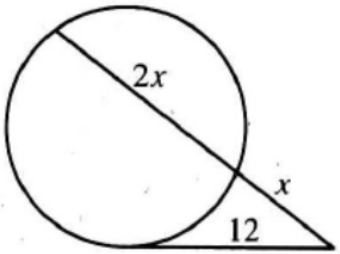
$x =$ _____

3.



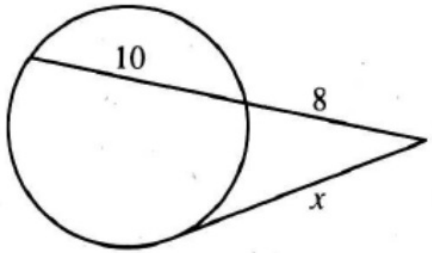
$x =$ _____

4.



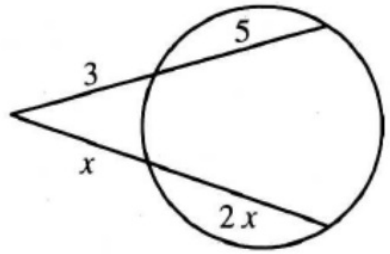
$x =$ _____

5.



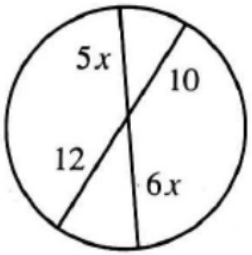
$x =$ _____

6.

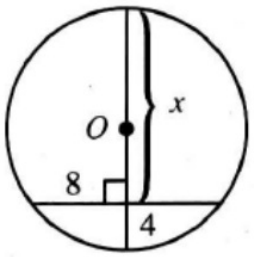


$x =$ _____

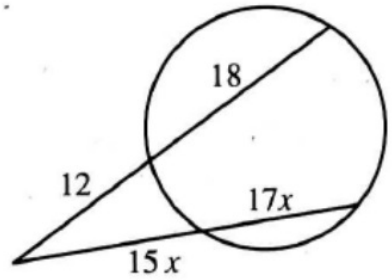
7.



8.

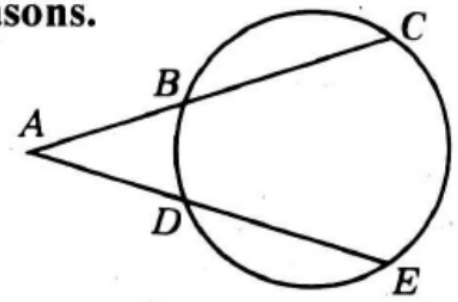


9.



Supply the missing statements and reasons.

10. Given: $\overline{AC}$ and $\overline{AE}$ are secants;
$\overline{AB} \cong \overline{AD}$
Prove: $\overline{AC} \cong \overline{AE}$



Proof:

Statements	Reasons
1. _____	1. Given
2. $AC \cdot AB = AE \cdot AD$	2. _____
	_____
	_____
	_____
3. $AC \cdot AB = AE \cdot AB$	3. _____
4. $AC = AE$	4. _____
5. $\overline{AC} \cong \overline{AE}$	5. _____

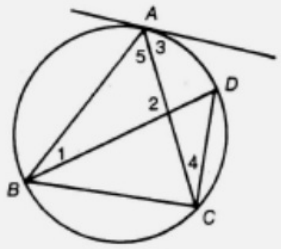
Practice 36

Angles and Segments

Lessons 9-5 through 9-7

Complete the following.

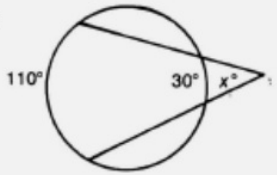
1. If $m\overset{\frown}{AB} = 130$ and $m\overset{\frown}{CD} = 70$, then $m\angle 2 =$ 100.
2. If $m\angle 4 = 26$, then $m\angle 1 =$ 26.
3. If $m\overset{\frown}{AB} = 100$ and $m\overset{\frown}{BC} = 120$, then $m\angle 3 =$ 70.
4. If $\overline{AB} \cong \overline{AC}$ and $m\overset{\frown}{AB} = 130$, then $m\angle 5 =$ 50.
5. If $m\angle 2 = 105$ and $m\overset{\frown}{DC} = 55$, then $m\overset{\frown}{AB} =$ 155.
6. If $\overline{DB}$ is a diameter, then $m\angle BCD =$ 90.



Exs. 1–6

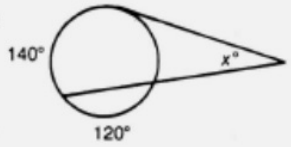
Find the value of x in each of the following circles.

7.



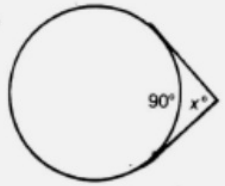
$x =$ 40

8.



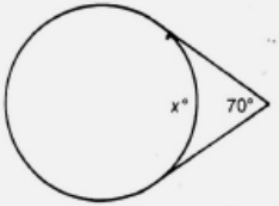
$x =$ 20

9.



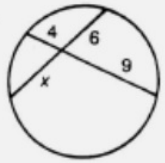
$x =$ 90

10.



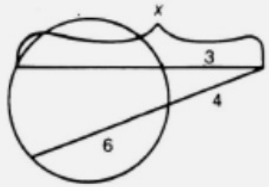
$x =$ 110

11.



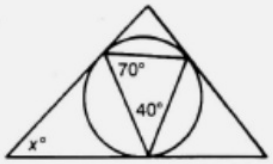
$x =$ 6

12.



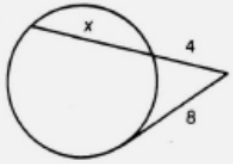
$x =$ $13\frac{1}{3}$

13.



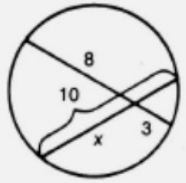
$x =$ 40

14.



$x =$ 12

15.



$x =$ 6,

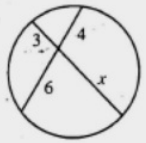
or $x =$ 4

Circles and Lengths of Segments

For use after Section 9–7

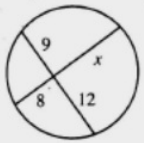
Chords, secants, and tangents are shown. Find the value of x. In Exercise 8, O is the center of the circle.

1.



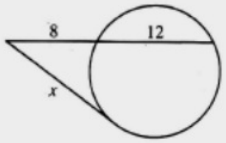
$x =$ 8

2.



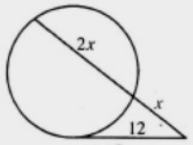
$x =$ 13.5

3.



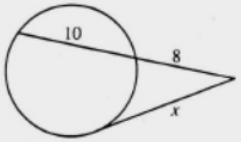
$x =$ $4\sqrt{10}$

4.



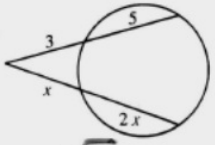
$x =$ $4\sqrt{3}$

5.



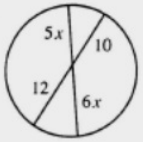
$x =$ 12

6.



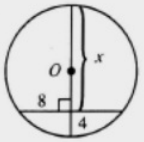
$x =$ $2\sqrt{2}$

7.



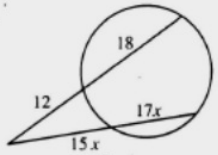
$x =$ 2

8.



$x =$ 16

9.

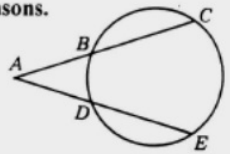


$x =$ $\frac{\sqrt{3}}{2}$

Supply the missing statements and reasons.

10. Given: $\overline{AC}$ and $\overline{AE}$ are secants; $\overline{AB} \cong \overline{AD}$

Prove: $\overline{AC} \cong \overline{AE}$



Proof:

Statements	Reasons
1. $\overline{AC}$ and $\overline{AE}$ are secants; $\overline{AB} \cong \overline{AD}$	1. Given
2. $AC \cdot AB = AE \cdot AD$	2. When 2 secant segments are drawn to a ⊙ from an ext pt the product of 1 sec. seg. and its ext seg = the product of the other sec. seg. and its ext. seg.
3. $AC \cdot AB = AE \cdot AB$	3. substitution prop
4. $AC = AE$	4. Div prop of =
5. $\overline{AC} \cong \overline{AE}$	5. Defn of $\cong$ segs.