

Name: _____

Period: _____

Unit 12 Circles Test Review

Identify a line, segment, or point in the diagram that is described by each term.

1. Chord \overline{GK} , \overline{EF} , or \overline{HC}

2. Secant \overleftrightarrow{EF}

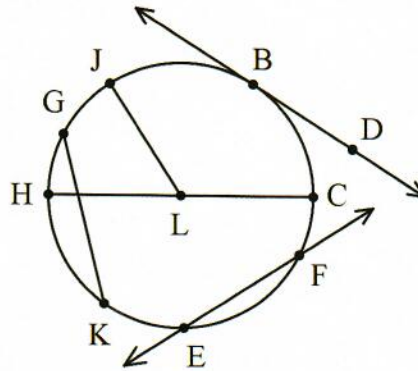
3. Diameter \overline{HC}

4. Tangent \overleftrightarrow{BD}

5. Radius \overline{LJ} , \overline{LH} or \overline{LC}

6. Point of Tangency B

7. Center L



\overline{AC} and \overline{BD} are diameters. Find the indicated measure and determine if the arc is a major or minor arc.

8. $m\widehat{DC}$ 35°
(vertical angles)

Is this arc a major or minor arc? minor

9. $m\widehat{BC}$ 145°
 $180^\circ - 35^\circ$

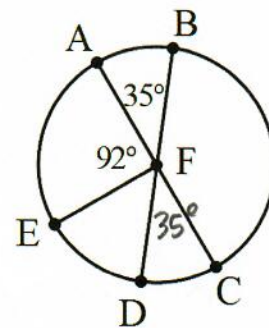
Is this arc a major or minor arc? minor

10. $m\widehat{CAB}$ 215°
 $180^\circ + 35^\circ$

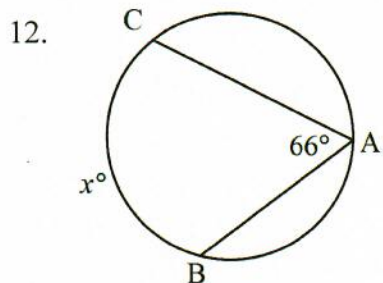
Is this arc a major or minor arc? major

11. $m\widehat{DE}$ 53°
 $180^\circ - 92^\circ - 35^\circ$

Is this arc a major or minor arc? minor

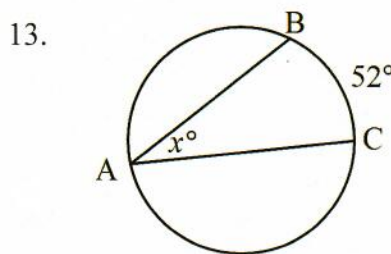


Find the value of the variable(s). Show work.



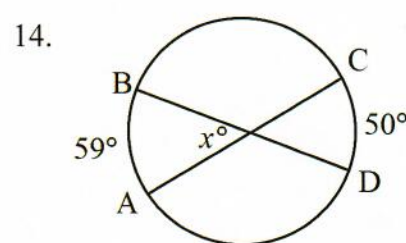
$$66 \cdot 2 = 132$$

$$\boxed{x = 132^\circ}$$



$$\frac{1}{2} \cdot 52^\circ = 26^\circ$$

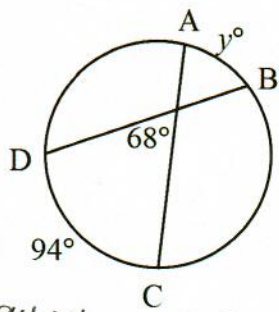
$$\boxed{x = 26^\circ}$$



$$\frac{59^\circ + 50^\circ}{2} = 54.5^\circ$$

$$\boxed{x = 54.5^\circ}$$

15.

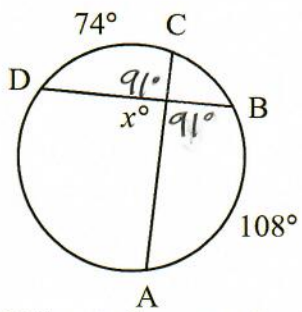


$$2 \cdot \frac{94 + y}{2} = 68 \cdot 2$$

$$94 + y = 136$$

$$y = 42^\circ$$

16.

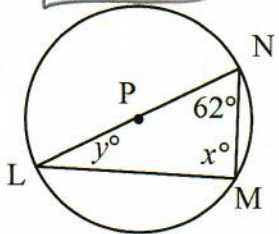


$$\frac{74 + 108}{2} = 91^\circ$$

$$x = 180 - 91$$

$$x = 89^\circ$$

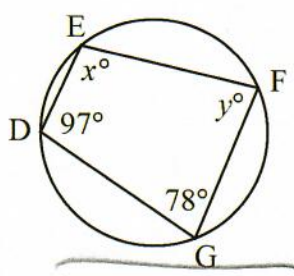
17.



$$x = 90^\circ$$

$$y = 28^\circ$$

18.

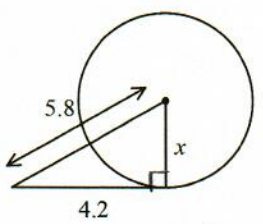


$$x = 102^\circ$$

$$y = 83^\circ$$

Find the segment length indicated. Assume that segments which appear to be tangent are actually tangent. SHOW WORK!

19.



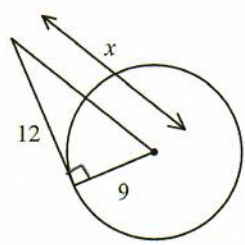
$$x^2 + 4.2^2 = 5.8^2$$

$$x^2 + 17.64 = 33.64$$

$$\sqrt{x^2} = \sqrt{16}$$

$$x = 4$$

20.



$$9^2 + 12^2 = x^2$$

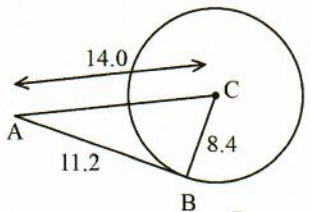
$$81 + 144 = x^2$$

$$\sqrt{225} = \sqrt{x^2}$$

$$15 = x$$

Determine if \overline{AB} is tangent to the circle. SHOW WORK!

21.



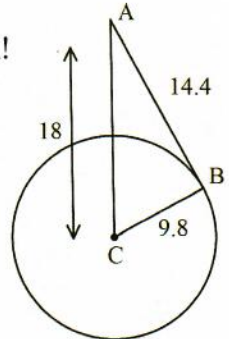
$$11.2^2 + 8.4^2 \stackrel{?}{=} 14^2$$

$$125.44 + 70.56 \stackrel{?}{=} 196$$

$$196 = 196$$

yes, tangent

22.



$$9.8^2 + 14.4^2 \stackrel{?}{=} 18^2$$

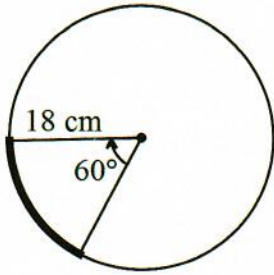
$$96.04 + 207.36 \stackrel{?}{=} 324$$

$$303.4 \neq 324$$

not tangent

Find the length of each arc. Write your answers in terms of π and as decimals rounded to the nearest tenth.

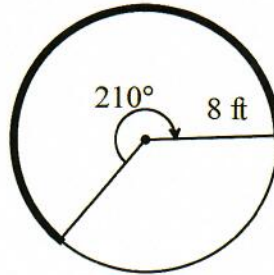
23.



$$\frac{60}{360} \cdot 2\pi(18) = 6\pi \text{ cm}$$

$$\approx 18.8 \text{ cm}$$

24.

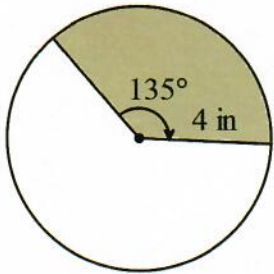


$$\frac{210}{360} \cdot 2\pi(8) = \frac{28\pi}{3} \text{ ft}$$

$$\approx 29.3 \text{ ft}$$

Find the area of each sector. Write your answers in terms of π and as decimals rounded to the nearest tenth.

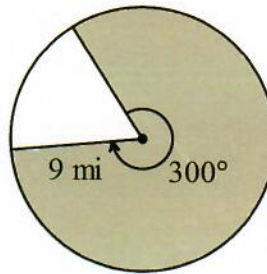
25.



$$\frac{135}{360} \cdot \pi(4)^2 = 6\pi \text{ in}^2$$

$$\approx 18.8 \text{ in}^2$$

26.

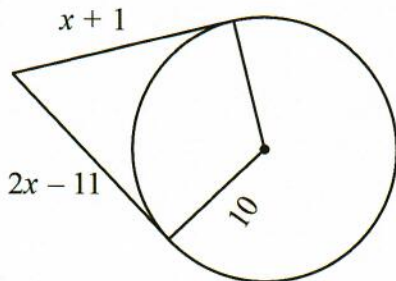


$$\frac{300}{360} \cdot \pi(9)^2 = \frac{135\pi}{2} \text{ mi}^2$$

$$\approx 212.1 \text{ mi}^2$$

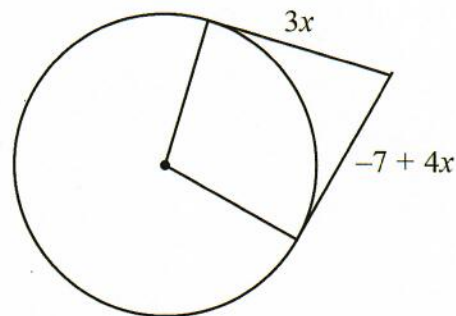
Solve for x . Assume that segments which appear to be tangent are tangent.

27.



$$\begin{array}{r} x+1 = 2x-11 \\ -x \quad -x \\ \hline 1 = x-11 \\ +11 \quad +11 \\ \hline 12 = x \end{array}$$

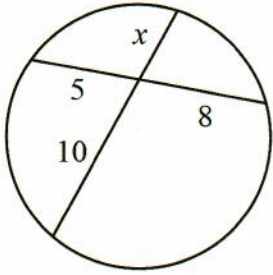
28.



$$\begin{array}{r} 3x = -7+4x \\ -4x \quad -4x \\ \hline -x = -7 \\ \hline x = 7 \end{array}$$

Solve for x .

29.

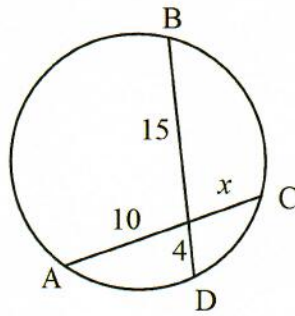


$$10 \cdot x = 5 \cdot 8$$

$$\frac{10x}{10} = \frac{40}{10}$$

$$\boxed{x = 4}$$

30.

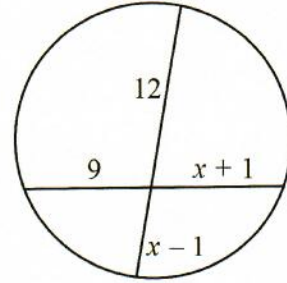


$$10 \cdot x = 15 \cdot 4$$

$$\frac{10x}{10} = \frac{60}{10}$$

$$\boxed{x = 6}$$

31.



$$9(x+1) = 12(x-1)$$

$$9x + 9 = 12x - 12$$

$$-9x \quad -9x$$

$$9 = 3x - 12$$

$$+12 \quad +12$$

$$\frac{21}{3} = \frac{3x}{3}$$

$$\boxed{7 = x}$$

Write the standard equation of the circle with the given center and radius.

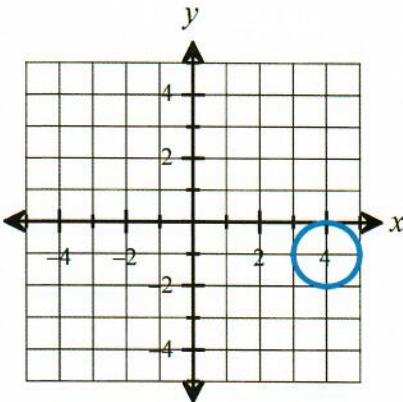
32. Center: $(0, 4)$, Radius: 2

33. Center: $(-3, -8)$, Radius: 6

Equation: $x^2 + (y-4)^2 = 4$

Equation: $(x+3)^2 + (y+8)^2 = 36$

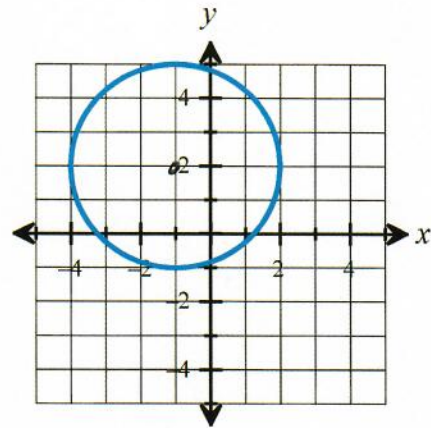
34.



Center: $(4, -1)$ Radius: 1

Equation: $(x-4)^2 + (y+1)^2 = 1$

35.



Center: $(-1, 2)$ Radius: 3

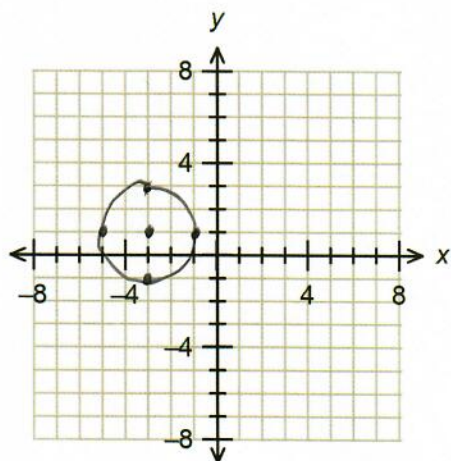
Equation: $(x+1)^2 + (y-2)^2 = 9$

Give the radius and the coordinates of the center of each circle. Then graph the circle.

36. $(x + 3)^2 + (y - 1)^2 = 4$

Center: $(-3, 1)$

Radius: 2



37. $(x - 4)^2 + y^2 = 25$

Center: $(4, 0)$

Radius: 5

