

Determine if the segment AB is tangent to the circle.

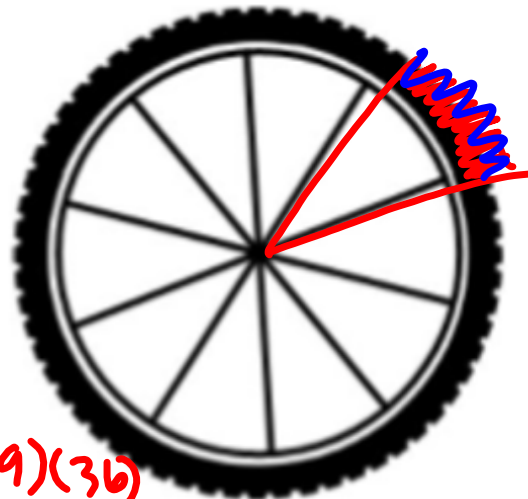
$$6.5^2 + 9^2 = 11.5^2$$

$$123.25 \neq 132.25$$

not tangent

The spokes of a bicycle wheel form 10 congruent central angles. The diameter of the circle formed by the outer edge of the wheel is 18 inches. What is the length, to the nearest 0.1 inch, of the outer edge of the wheel between two consecutive spokes?

- A. 1.8 inches
- B. 5.7 inches
- C. 11.3 inches
- D. 25.4 inches



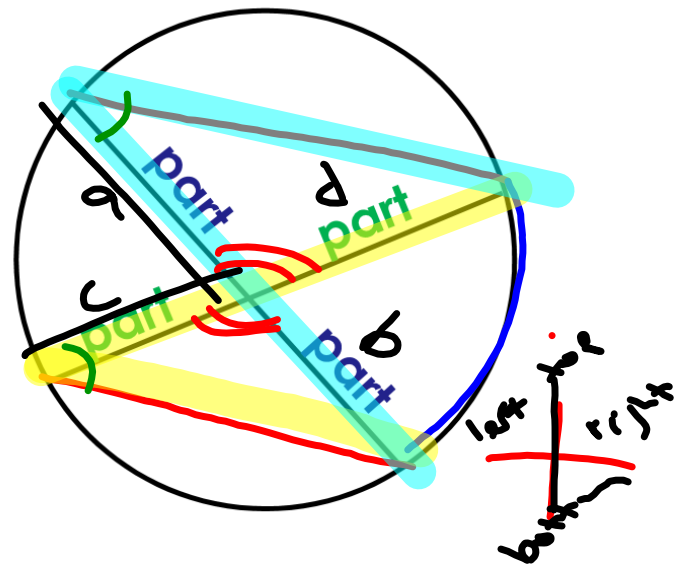
$$\frac{2\pi r \theta}{360} = \frac{2\pi(9)(36)}{360} = 5.7 \text{ in}$$

Segment Lengths in Circles

Two chords
intersect
inside

the circle

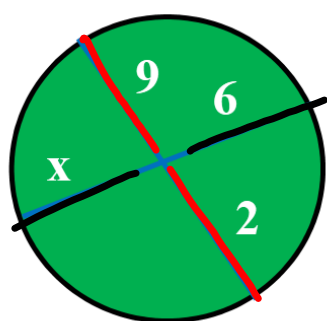
$$\frac{c}{a} = \frac{b}{d}$$



$$\left(\underline{\text{Part}} \right) \left(\underline{\text{Part}} \right) = \left(\underline{\text{Part}} \right) \left(\underline{\text{Part}} \right)$$

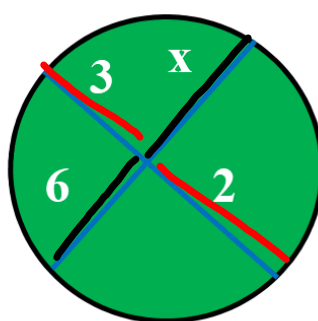
Go down the chord and **multiply**

Examples:



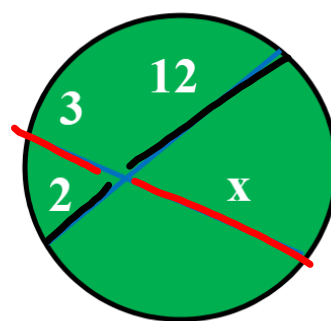
$$\frac{6x}{6} = \frac{9(2)}{6}$$

$$x = 3$$



$$\frac{6x}{6} = \frac{3(2)}{6}$$

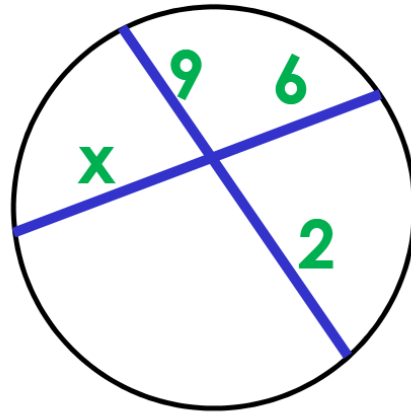
$$x = 1$$



$$\frac{3x}{3} = \frac{12(2)}{3}$$

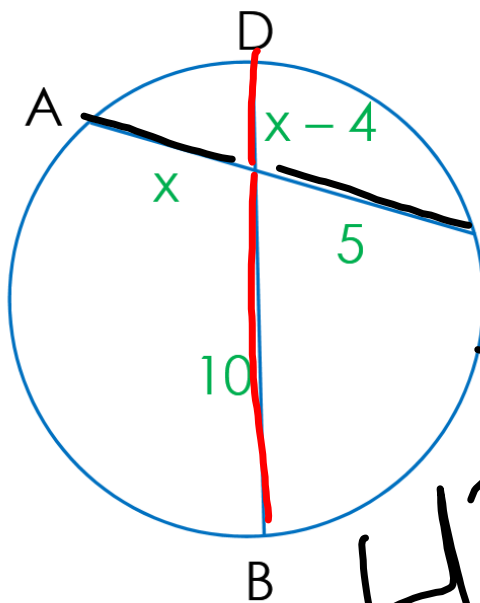
$$x = 8$$

You try. Solve for x.



$$x = 3$$

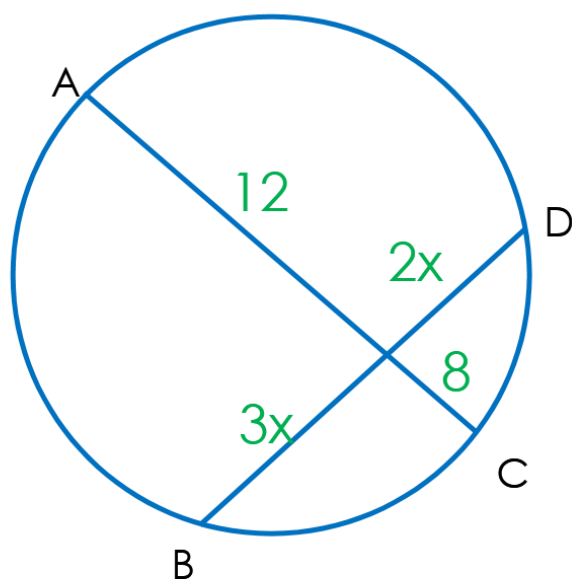
Find the length of AC and DB.



$$\begin{aligned}
 5x &= 10(x-4) \\
 5x &= 10x - 40 \\
 +40 & \quad +40 \\
 5x + 40 &= 10x \\
 -5x & \quad -5x \\
 40 &= 5x \\
 \underline{D = x} &
 \end{aligned}$$

40

Find the length of \overline{DB} .



$$\begin{aligned} 3x(2x) &= 12(8) \\ 6x^2 &= 96 \\ \frac{6x^2}{6} &= \frac{96}{6} \\ x^2 &= 16 \\ x &= 4 \end{aligned}$$

Geometry

Name _____ ID: 1

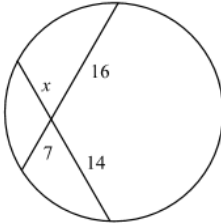
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Assignment

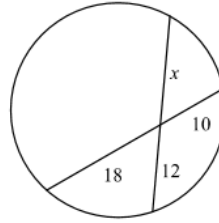
Date _____ Period _____

Solve for x . Assume that lines which appear tangent are tangent.

1)



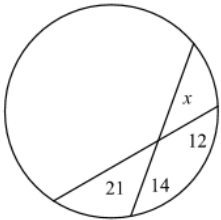
2)



$$\frac{12x}{12} = \frac{18(10)}{12}$$

$$x = 15$$

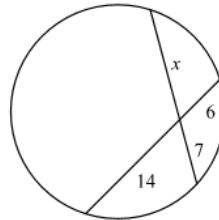
3)



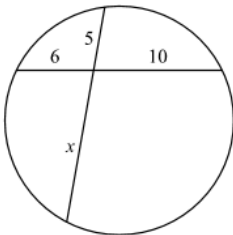
$$\frac{14x}{14} = \frac{21(12)}{14}$$

$$x = 18$$

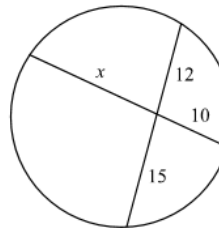
4)



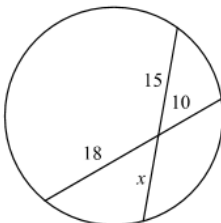
5)



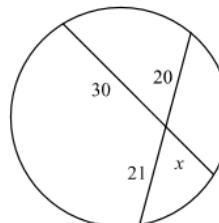
6)



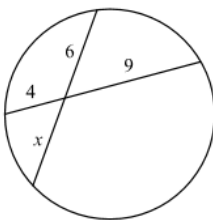
7)



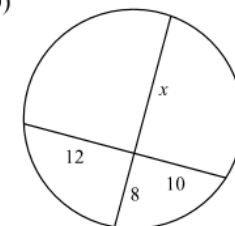
8)



9)



10)



Geometry

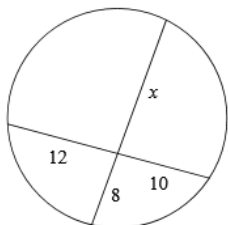
Name _____ ID: 1

Chords in Circles

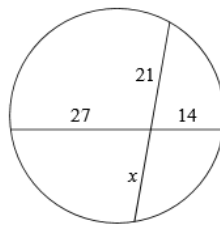
Date _____ Period _____

Solve for x . Assume that lines which appear tangent are tangent.

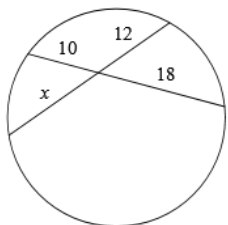
1)



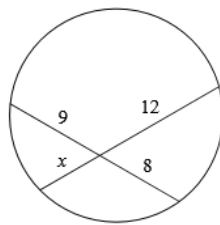
2)



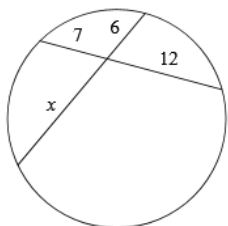
3)



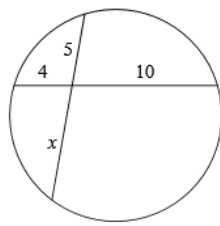
4)



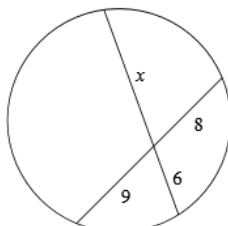
5)



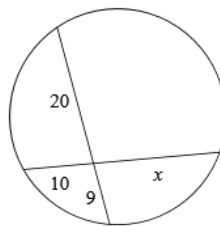
6)



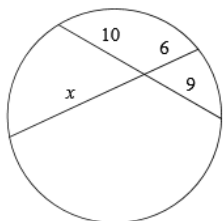
7)



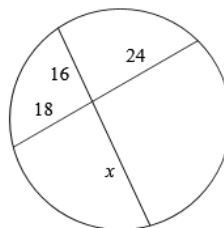
8)



9)

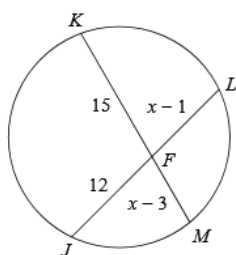


10)

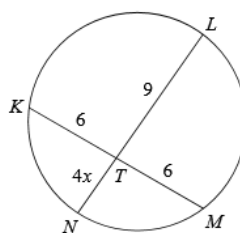


Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

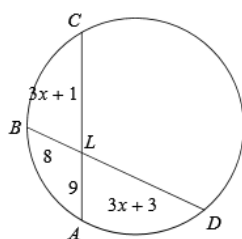
11) Find FM



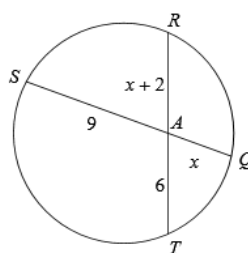
12) Find LN



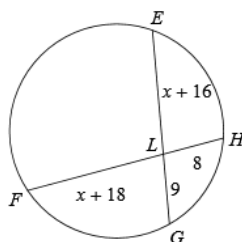
13) Find BD



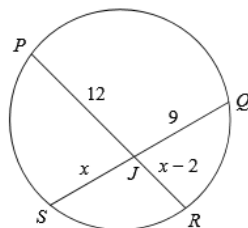
14) Find SQ



15) Find LE



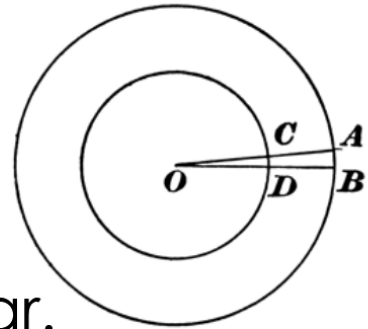
16) Find JS



Answers to Chords in Circles (ID: 1)

- | | | | |
|--------|--------|--------|--------|
| 1) 15 | 2) 18 | 3) 15 | 4) 6 |
| 5) 14 | 6) 8 | 7) 12 | 8) 18 |
| 9) 15 | 10) 27 | 11) 8 | 12) 13 |
| 13) 26 | 14) 13 | 15) 16 | 16) 8 |

Use the provided image to determine which of the following statements is NOT true.



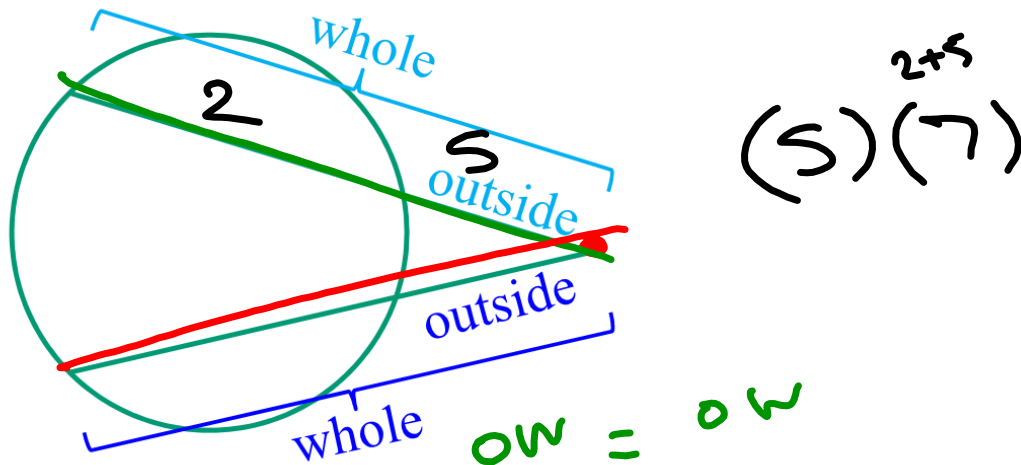
A. $m\widehat{AB} = m\widehat{CD}$

B. $\widehat{AB} > \widehat{CD}$

C. The two circles are similar.

D. The two circles are congruent.

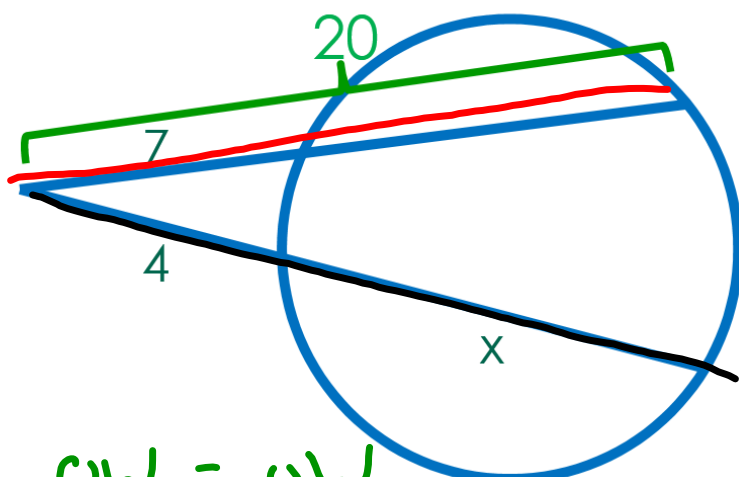
Two secants intersect
OUTSIDE the circle.



$$\underline{\text{Out}} \quad (\underline{\text{Whole}}) = \underline{\text{Out}} \quad (\underline{\text{Whole}})$$

Sometimes you have to add to get the whole.

Solve for x.



$$OW = OW$$

$$7(20) = 4(x + 4)$$

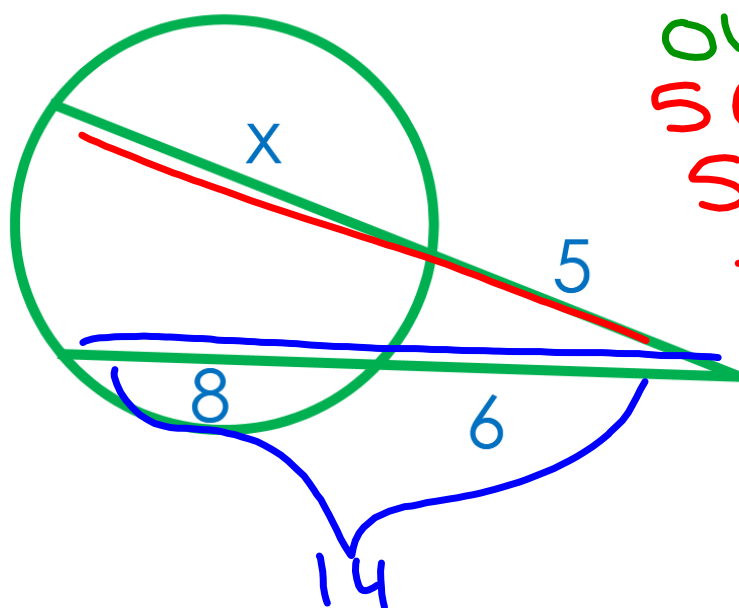
$$140 = 4x + 16$$

$$\begin{array}{r} 140 = 4x + 16 \\ -16 \quad -16 \\ \hline 124 = 4x \end{array}$$

$$\frac{124}{4} = \frac{4x}{4}$$

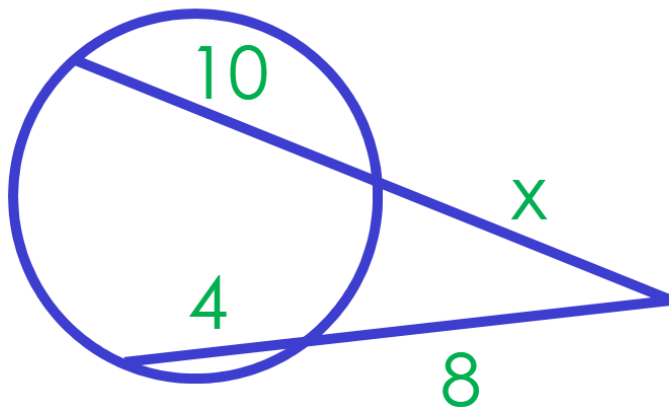
31

Solve for x.

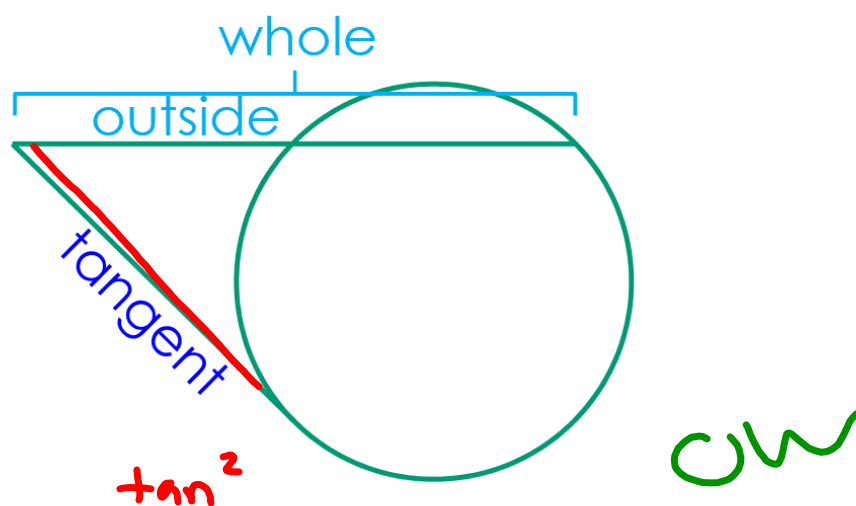


$$\begin{aligned}
 OW &= OW \\
 5(x+5) &= 6(14) \\
 5x+25 &= 84 \\
 \underline{-25} \quad \underline{-25} \\
 5x &= 59 \\
 \underline{5} \quad \underline{5} \\
 x &= \frac{59}{5}
 \end{aligned}$$

Solve for x .

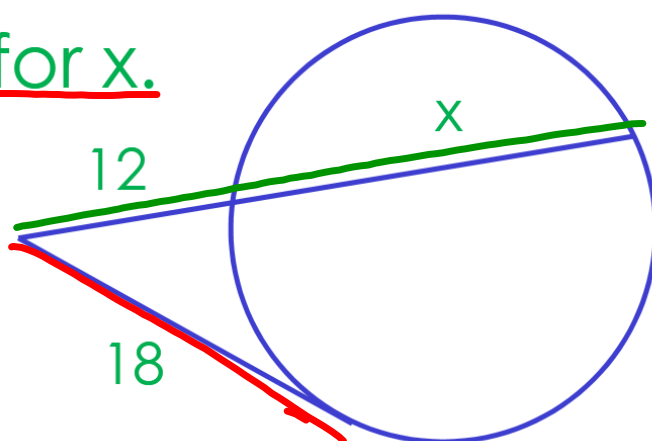


Tangent And Secant



$$\left(\underline{\text{tangent}} \right)^2 = \underline{\text{Out}} \left(\underline{\text{Whole}} \right)$$

Solve for x.



\tan^2

Ow

$$18^2 = 12(x + 12)$$

$$324 = 12x + 144$$

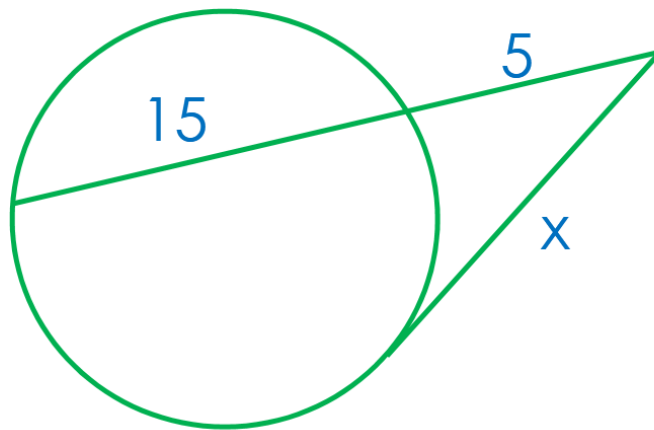
-144

-144

$$\frac{180}{12} = \frac{12x}{12}$$

$$x = 15$$

Solve for x .



Geometry

Name _____ ID: 1

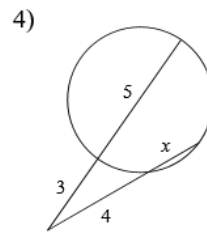
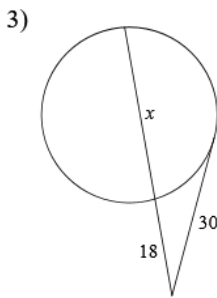
Secants and Tangents

Date _____ Period _____

Solve for x. Assume that lines which appear tangent are tangent.

1)
 Sec Sec
 OW = OW
 $9(24) = 8(x+8)$
 $216 = 8x + 64$
 $-64 \quad -64$
 $152 = 8x$
 $x = 19$

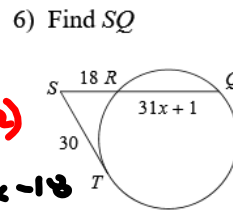
2)
 Sec Tan
 OW Tan²
 $8(x+8) = 12^2$
 $8x + 64 = 144$
 $-64 \quad -64$
 $8x = 80$
 $x = 10$



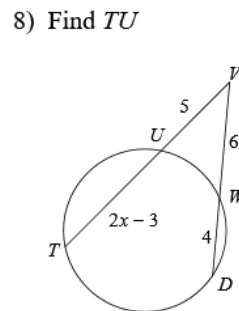
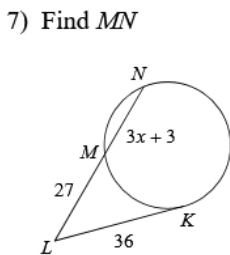
Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

5) Find HF = 16

 Sec Sec
 OW = OW
 $8(18) = 9(9+3x-2)$
 $144 = 81 + 27x - 18$
 $144 = 63 + 27x$
 $-63 \quad -63$
 $81 = 27x$
 $3 = x$

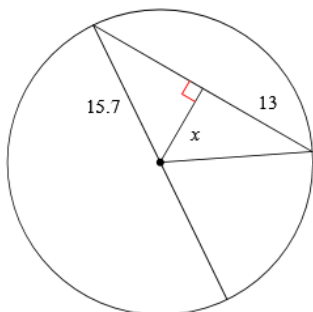


HF
 $9+3x-2$
 $9+3(3)-2$

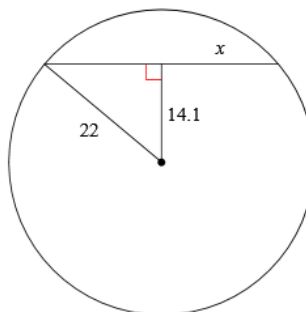


Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

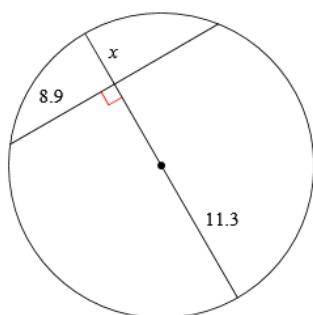
9)



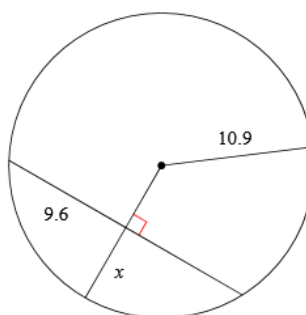
10)



11)

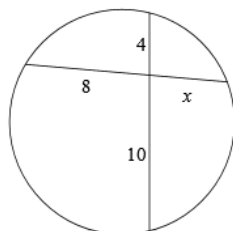


12)

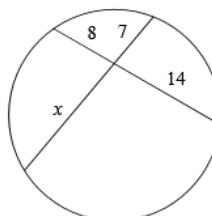


Solve for x . Assume that lines which appear tangent are tangent.

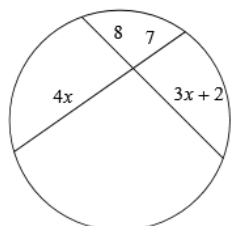
13)



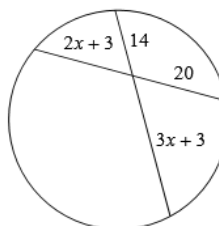
14)



15)



16)



Answers to Secants and Tangents (ID: 1)

- | | | | |
|--------|----------|---------|---------|
| 1) 19 | 2) 10 | 3) 32 | 4) 2 |
| 5) 16 | 6) 50 | 7) 21 | 8) 7 |
| 9) 8.8 | 10) 16.9 | 11) 4.3 | 12) 5.7 |
| 13) 5 | 14) 16 | 15) 4 | 16) 9 |

