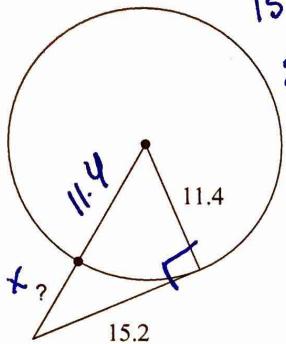


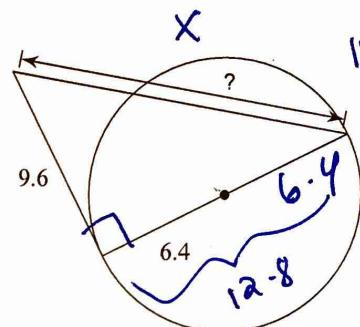
## HW 2 - Segments in Circles

Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

1)



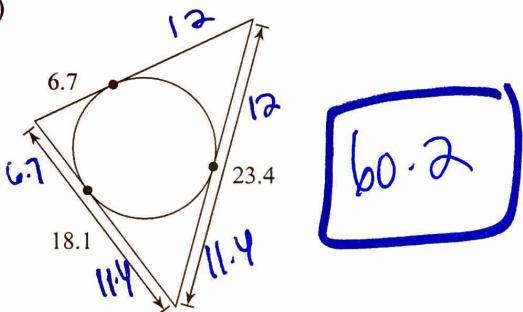
$$\begin{aligned} 15.2^2 + 11.4^2 &= (x+11.4)^2 \\ 231.04 + 129.96 &= (x+11.4)^2 \\ 361 &= (x+11.4)^2 \\ 19 &= x+11.4 \\ x &= 7.6 \end{aligned}$$



$$\begin{aligned} 12.8^2 + 9.6^2 &= x^2 \\ 163.84 + 92.16 &= x^2 \\ 256 &= x^2 \\ x &= 16 \end{aligned}$$

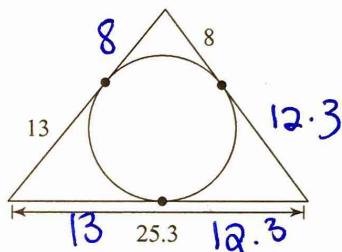
Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

3)



$$60.2$$

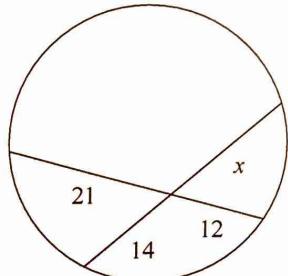
4)



$$66.6$$

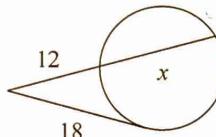
Solve for x. Assume that lines which appear tangent are tangent.

5)



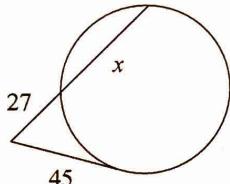
$$\begin{aligned} x \cdot 14 &= 21 \cdot 12 \\ 14x &= 252 \\ x &= 18 \end{aligned}$$

6)



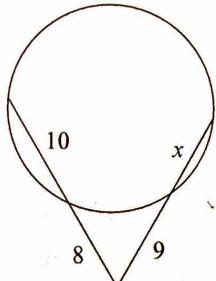
$$\begin{aligned} 18^2 &= 12(12+x) \\ 324 &= 144 + 12x \\ 180 &= 12x \\ x &= 15 \end{aligned}$$

7)

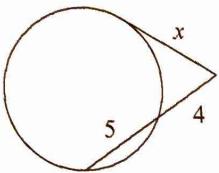


$$\begin{aligned} 45^2 &= 27(27+x) \\ 2025 &= 729 + 27x \\ 1296 &= 27x \\ x &= 48 \end{aligned}$$

8)

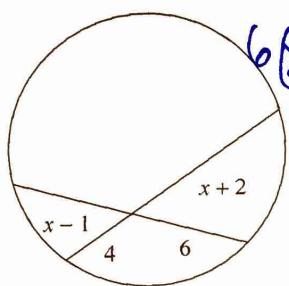


$$\begin{aligned} 8(8+10) &= 9(9+x) \\ 8(18) &= 81 + 9x \\ 144 &= 81 + 9x \\ 63 &= 9x \\ x &= 7 \end{aligned}$$



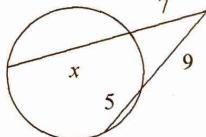
$$\begin{aligned}x^2 &= 4(4+5) \\x^2 &= 4(9) \\x^2 &= 36 \\x &= 6\end{aligned}$$

11)



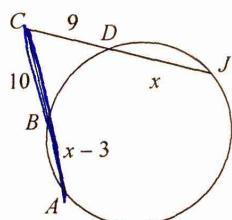
$$\begin{aligned}6(x-1) &= 4(x+2) \\6x-6 &= 4x+8 \\2x &= 14 \\x &= 7\end{aligned}$$

13)



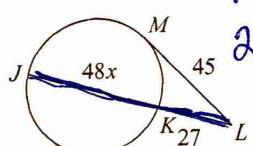
$$\begin{aligned}7(7+x) &= 9(9+5) \\49+7x &= 9(14) \\49+7x &= 126 \\7x &= 77 \\x &= 11\end{aligned}$$

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

15) Find  $AC$ 

$$\begin{aligned}9(9+x) &= 10(10+x-3) \\81+9x &= 10(x+7) \\81+9x &= 10x+70 \\11 &= x\end{aligned}$$

$$\begin{aligned}AC &= 10+11-3 \\AC &= 18\end{aligned}$$

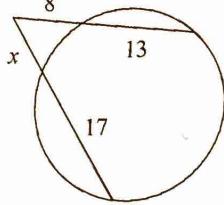
17) Find  $LJ$ 

$$\begin{aligned}45^2 &= 27(27+48x) \\2025 &= 729+1296x \\1296 &= 1296x \\x &= 1\end{aligned}$$

$$LJ = 48(1)+27$$

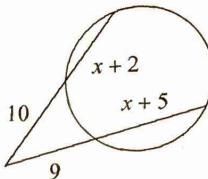
$$LJ = 75$$

10)



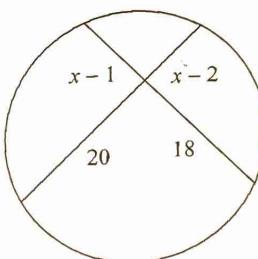
$$\begin{aligned}x(x+17) &= 8(8+13) \\x^2+17x &= 8(21) \\x^2+17x &= 168 \\x^2+17x-168 &= 0 \\(x+24)(x-7) &= 0 \\x &\neq -24 \quad x = 7\end{aligned}$$

12)

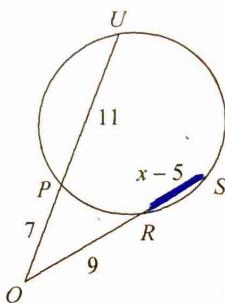


$$\begin{aligned}9(9+x+5) &= 10(10+x+2) \\9(x+14) &= 10(x+12) \\9x+126 &= 10x+120 \\6 &= x\end{aligned}$$

14)

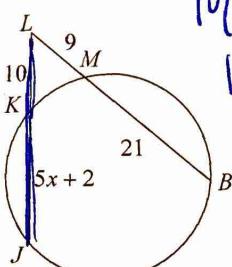


$$\begin{aligned}20(x-2) &= 18(x-1) \\20x-40 &= 18x-18 \\2x &= 22 \\x &= 11\end{aligned}$$

16) Find  $SR$ 

$$\begin{aligned}9(9+x-5) &= 7(7+11) \\9(x+4) &= 7(18) \\9x+36 &= 126 \\9x &= 90 \\x &= 10\end{aligned}$$

$$SR = 10-5 \quad SR = 5$$

18) Find  $JL$ 

$$\begin{aligned}10(10+5x+2) &= 9(9+21) \\10(5x+12) &= 9(30) \\50x+120 &= 270 \\50x &= 150 \\x &= 3\end{aligned}$$

-2-

$$JL = 10+5(3)+2$$

$$JL = 27$$