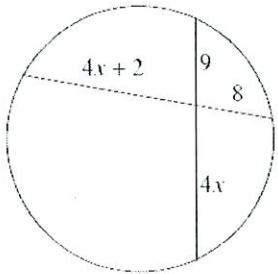


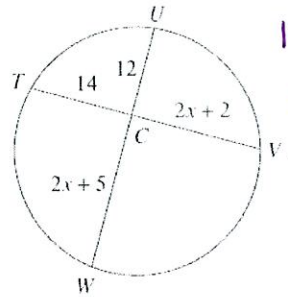
Day 2 – Segment Lengths: Tangents and Secants

1. $x = \underline{4}$



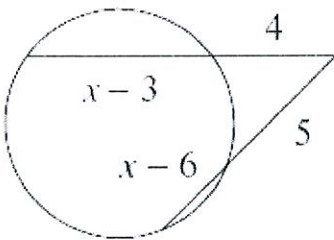
$$\begin{aligned} 9(4x) &= 8(4x+2) \\ 36x &= 32x+16 \\ 4x &= 16 \\ x &= 4 \end{aligned}$$

2. $x = \underline{8}$



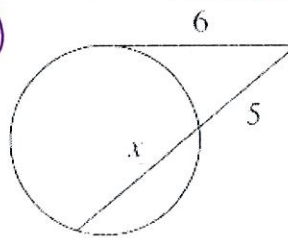
$$\begin{aligned} 14(2x+2) &= 12(2x+5) \\ 28x+28 &= 24x+60 \\ 4x &= 32 \\ x &= 8 \end{aligned}$$

3. $x = \underline{9}$



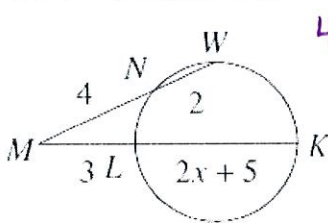
$$\begin{aligned} 4(4+x-3) &= 5(5+x-6) \\ 4(x+1) &= 5(x-1) \\ 4x+4 &= 5x-5 \\ -x &= -9 \\ x &= 9 \end{aligned}$$

4. $x = \underline{2.2}$



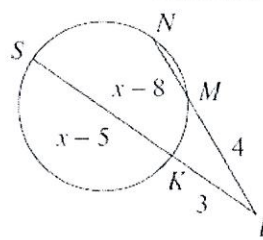
$$\begin{aligned} 6^2 &= 5(5+x) \\ 36 &= 25+5x \\ 11 &= 5x \\ 2.2 &= x \end{aligned}$$

5. $x = \underline{0}$



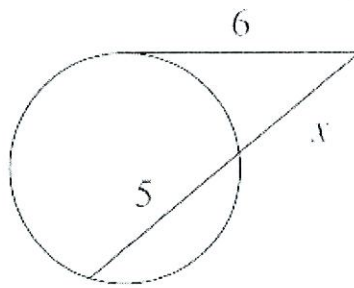
$$\begin{aligned} 4(4+2) &= 3(3+2x+5) \\ 4(6) &= 3(2x+8) \\ 24 &= 6x+24 \\ 0 &= 6x \\ 0 &= x \end{aligned}$$

6. $x = \underline{10}$



$$\begin{aligned} 3(3+x-5) &= 4(4+x-8) \\ 3(x-2) &= 4(x-4) \\ 3x-6 &= 4x-16 \\ -x &= -10 \\ x &= 10 \end{aligned}$$

7. $x = \underline{4}$



$$6^2 = x(x+5)$$

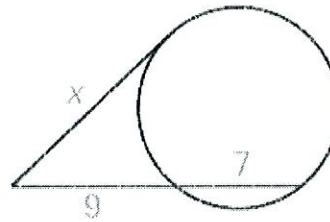
$$36 = x^2 + 5x$$

$$0 = x^2 + 5x - 36$$

$$0 = (x+9)(x-4)$$

$$x = -9 \text{ and } x = 4$$

8. $x = \underline{12}$



$$x^2 = 9(9+7)$$

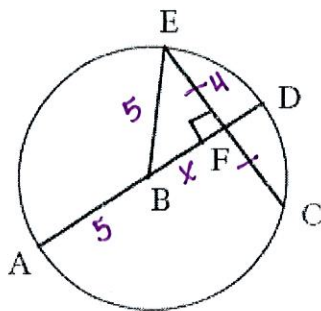
$$x^2 = 9(16)$$

$$x^2 = 144$$

$$x = \pm 12$$

$$x = 12$$

9. $EC = 8, AB = 5, BF = \underline{3}$

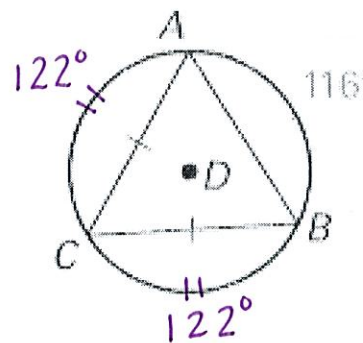


$$x^2 + 4^2 = 5^2$$

$$\sqrt{x^2} = \sqrt{9}$$

$$x = 3$$

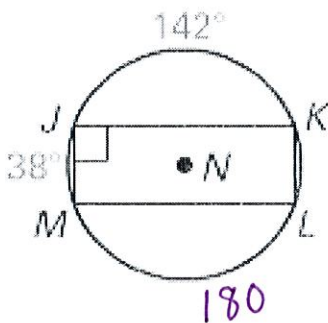
10. $m\widehat{BC} = \underline{122^\circ}$



$$360 - 116 = 244$$

$$244 / 2 = 122$$

11. $m\widehat{KLM} = \underline{180^\circ}$



12. $m\widehat{MN} = \underline{38^\circ}$

