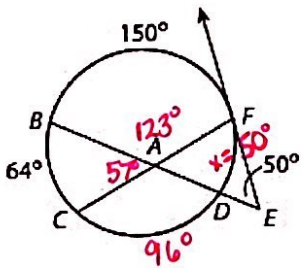


Unit 9: Angle and Segment Relationship Extension Problems

Key

1. Find the measure of $m\widehat{FD}$ and $m\widehat{CD}$.



$$\widehat{FD} = 50^\circ$$

$$\widehat{CD} = 96^\circ$$

$$\frac{150 - x}{2} = 50$$

$$150 - x = 100$$

$$-x = -50$$

$$x = 50^\circ$$

$$\frac{64 + 50}{2} = \angle BAC$$

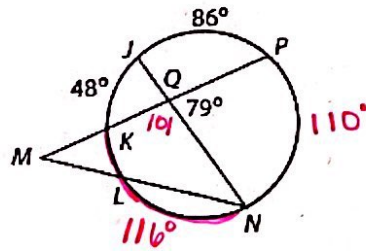
$$\angle BAC = 57^\circ$$

$$\frac{150 + x}{2} = 123$$

$$150 + x = 246$$

$$x = 96^\circ$$

2. Find the measure of $m\widehat{KN}$ and \widehat{NP}



$$\frac{86 + x}{2} = 101$$

$$86 + x = 202$$

$$x = 116^\circ$$

$$\widehat{KN} = 116^\circ$$

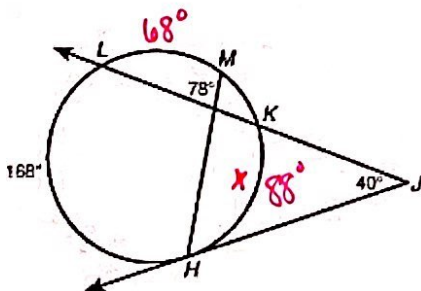
$$\frac{48 + x}{2} = 79$$

$$48 + x = 158$$

$$x = 110$$

$$\widehat{NP} = 110^\circ$$

3. Find the measure of $m\widehat{LM}$



$$\frac{168 - x}{2} = 40$$

$$168 - x = 80$$

$$-x = -88$$

$$x = 88^\circ$$

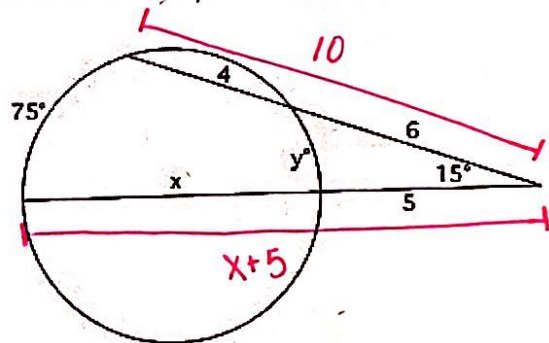
$$\frac{88 + x}{2} = 78$$

$$88 + x = 156$$

$$x = 68^\circ$$

$$\widehat{LM} = 68^\circ$$

4. Solve for x and y.



$$5(x + 5) = 6(10)$$

$$5x + 25 = 60$$

$$5x = 35$$

$$x = 7$$

$$\frac{75 - 15}{2} = y$$

$$y = 30^\circ$$