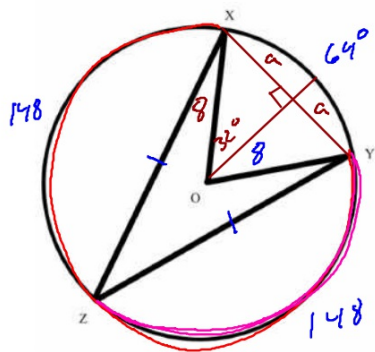


In the diagram below, the radius of the circle with center O is 8 cm, and $m\widehat{XY} = 64^\circ$. Find each of the following measures. $XZ = YZ$

SOH-CAH-TOA



$$m\widehat{XZY} = 296^\circ$$

$$m\widehat{YZ} = 148$$

$$m\angle XOY = 64^\circ$$

$$m\angle XZY = 32^\circ$$

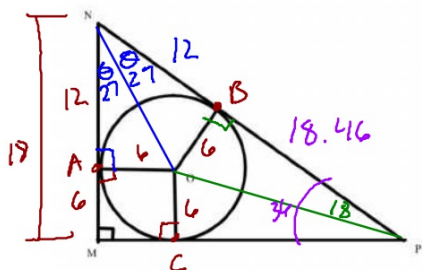
$$\text{Segment } XY = 8.47 \text{ cm}$$

$$\sin 32^\circ = \frac{a}{8}$$

$$a = 8 \sin 32^\circ$$

$$= 4.23$$

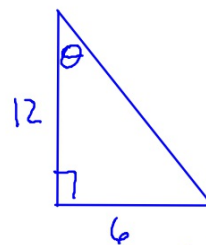
Each side of right $\triangle MNP$ is tangent to circle O. The radius of the circle is 6 cm and the length of MN is 18 cm. Find each of the following. Show your work.



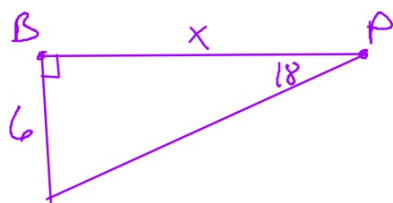
$$m\angle N = 54^\circ$$

$$m\angle P = 36^\circ$$

$$PN = 30.46$$



$$\tan^{-1}\left(\frac{6}{12}\right) = 27^\circ$$



$$X \tan 18^\circ = \frac{6}{X}$$

$$X \frac{\tan 18^\circ}{\tan 18^\circ} = \frac{6}{\tan 18^\circ}$$

$$X = \frac{6}{\tan 18^\circ} = 18.46$$