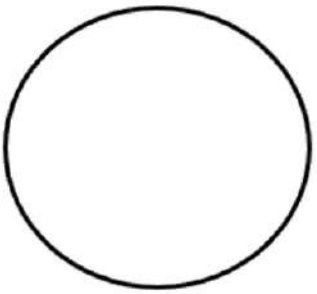
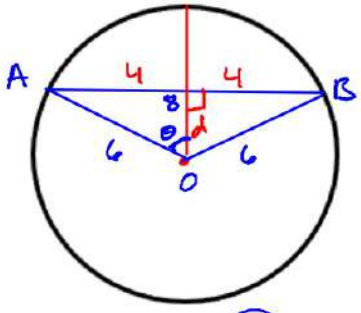
Suppose that a given circle has a radius of 6 inches.

What is the length of a chord that has a central angle of 115°?



What is the measure of the arc of a chord that is 8 inches long? What is the perpendicular distance from the center of the circle to the chord?



$d^2+4^2=6^2$

$d^2+16=36$

$d^2=20$

$d=\sqrt{20}=2\sqrt{5}\approx 4.47$

$\overset{\frown}{mAB}$

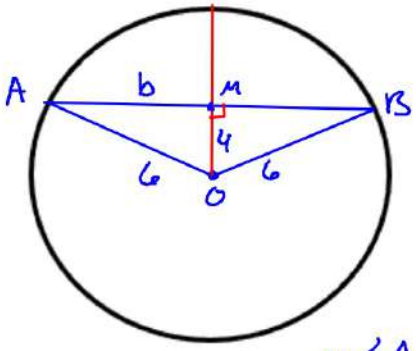
$\overset{\frown}{mAB} = 83.62^\circ$

$\sin\theta=\frac{4}{6}$

$\sin^{-1}\left(\frac{4}{6}\right)=\theta$

$\theta=41.81$

The perpendicular distance from the center of the circle to a chord is 4 inches. What is the length of the chord? What is the measure of its central angle?



$4^2 + b^2 = 6^2$

$b^2 = 20$

$b = \sqrt{20} = 2\sqrt{5} = 4.47$

$AB = (4.47)(2) = 8.94$ in

$\cos\theta = \frac{4}{6}$

$\cos^{-1}\left(\frac{4}{6}\right) = 48.18$

$m\angle AOB = 96.37$

Given $\overset{\frown}{RS} \cong \overset{\frown}{UT}$, how can you find UT?

$x^2 + 4^2 = 5.5^2$

$x^2 + 16 = 30.25$

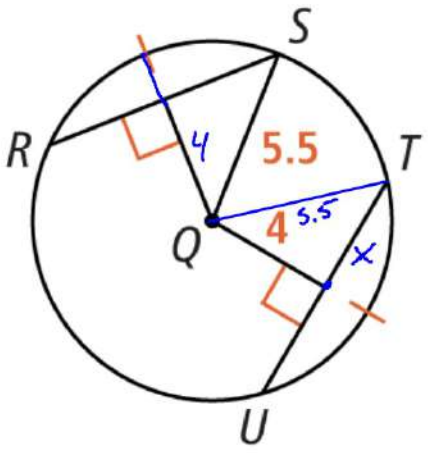
$\sqrt{x^2} = \sqrt{14.25}$

$x = 3.77$

$UT = 2(x)$

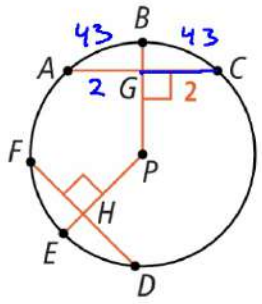
$= 2(3.77)$

$= 7.54$



5. In $\odot P$, $m\overset{\frown}{AB} = 43$, and $AC = DF$. Find DF.

Enter your answer DF = 4

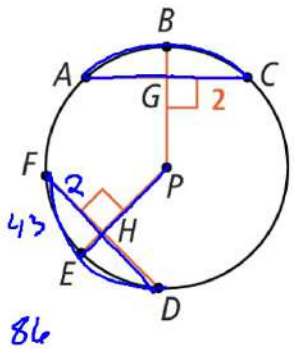


6. In $\odot P$, $m\overset{\frown}{AB} = 43$, and $AC = DF$. Find $m\overset{\frown}{AC}$.

$m\overset{\frown}{AC} = 86°$

7. In $\odot P$, $m\overset{\frown}{AB} = 43$, and $AC = DF$. Find FH.

Enter your answer.

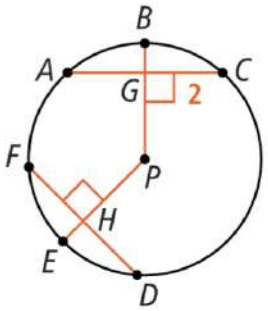


86

8. In $\odot P$, $m\overset{\frown}{AB} = 43$, and $AC = DF$. Find $m\overset{\frown}{DE}$.

9. In $\odot P$, $m\overset{\frown}{AB} = 43$, and $AC = DF$. Find AC.

Enter your answer.



10. In $\odot P$, $m\overset{\frown}{AB} = 43$, and $AC = DF$. Find $m\overset{\frown}{DF}$.