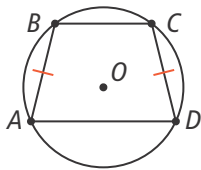


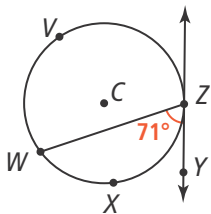


UNDERSTAND

17. **Mathematical Connections** Given $m\widehat{ABC} = x^\circ$, what is an expression for $m\widehat{DAB}$ in terms of x ? Explain.



18. **Error Analysis** Casey is asked to find $m\widehat{WVZ}$. What is Casey's error?



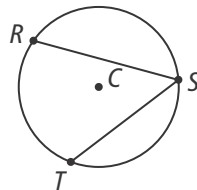
$$m\widehat{WVZ} = 360^\circ - 71^\circ = 289^\circ$$



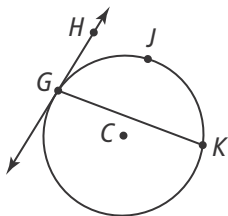
19. **Higher Order Thinking** Write a proof of the Inscribed Angles Theorem, Case 2.

Given: Center C is inside $\angle RST$.

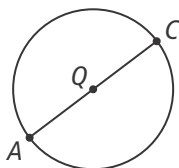
Prove: $m\angle RST = \frac{1}{2}m\widehat{RT}$



20. **Construct Arguments** Margaret measures $\angle HGK$ with a protractor and says that it is 98° . Is Margaret's answer reasonable? Explain.



21. **Use Structure** Given $\odot Q$ with diameter $\overline{AC}$, if point B is located on $\odot Q$, can $\angle ABC$ ever be less than 90° ? Can it ever be greater than 90° ? Explain.



PRACTICE

For Exercises 22–25, find each measure in $\odot P$.

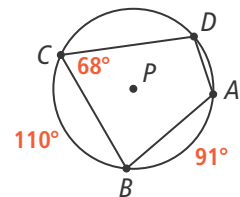
SEE EXAMPLES 1 AND 2

22. $m\widehat{AD}$

23. $m\widehat{BDC}$

24. $m\angle ADC$

25. $m\angle BAD$

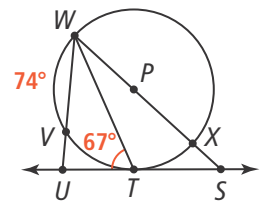


For Exercises 26–28, $\overleftrightarrow{SU}$ is tangent to $\odot P$ at point T . Find each measure. SEE EXAMPLES 2 AND 3

26. $m\widehat{TVW}$

27. $m\angle TWX$

28. $m\angle TWV$

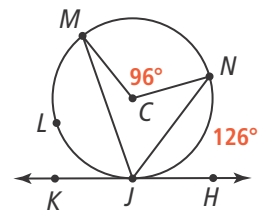


For Exercises 29–31, $\overleftrightarrow{HK}$ is tangent to $\odot C$ at point J . Find each measure. SEE EXAMPLES 3 AND 4

29. $m\angle KJM$

30. $m\angle MJN$

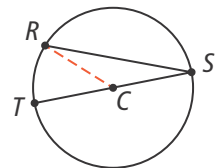
31. $m\angle HJN$



32. Write a proof of the Inscribed Angles Theorem, Case 1.

Given: Center C is on $\overline{ST}$.

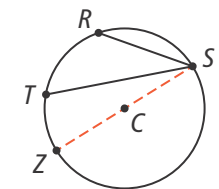
Prove: $m\angle RST = \frac{1}{2}m\widehat{RT}$



33. Write a proof of the Inscribed Angles Theorem, Case 3.

Given: Center C is outside $\angle RST$.

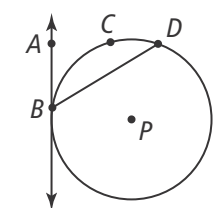
Prove: $m\angle RST = \frac{1}{2}m\widehat{RT}$



34. Write a two-column proof of Theorem 10-9.

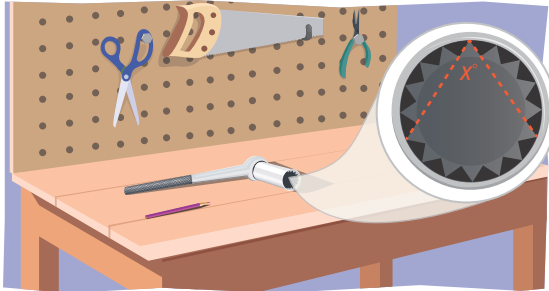
Given: $\overleftrightarrow{AB}$ tangent to $\odot P$ at point B .

Prove: $m\angle ABD = \frac{1}{2}m\widehat{BCD}$



APPLY

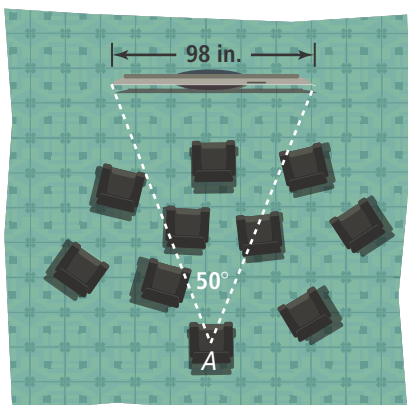
35. **Construct Arguments** Deondra needs to know the angle measure for each notch in the 16-notch socket wrench she is designing. The notches will be the same size. What is the angle measure?



36. **Use Structure** Cheyenne wants to make a replica of an antique sundial using the fragment of the sundial she acquired. Is there enough information for her to determine the diameter of the sundial? Explain.

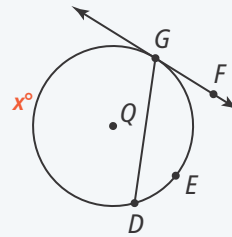


37. **Use Appropriate Tools** Malcom sets up chairs for a home theater showing on his television. His optimal viewing angle is 50° . Besides at chair A, where else could he sit with the same viewing angle? Draw a diagram and explain.

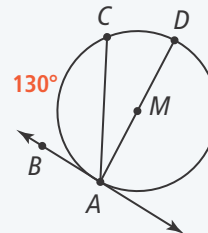


ASSESSMENT PRACTICE

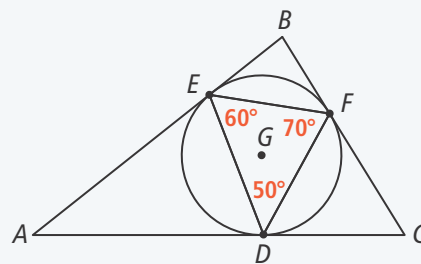
38. Write an expression that represents $m\angle DGF$.



39. **SAT/ACT** Segment AB is tangent to $\odot M$ at Point A . What is $m\angle DAC$?



- (A) 25
(B) 65
(C) 50
(D) 90
(E) 100
40. **Performance Task** Triangle DEF is inscribed in $\odot G$, and AB , BC , and AC are tangent to $\odot G$.



Part A Are there any isosceles triangles in the diagram? If so, explain why the triangles are isosceles. If not, explain why not.

Part B Are $\triangle ABC$ and $\triangle DEF$ similar? Explain.