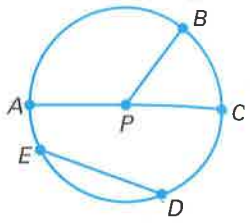
Practice and Apply

Use the figure of $\odot P$ below for Exercises 11–22.



11. Name the center of the circle.

12. Name a radius of the circle.

13. Name a chord of the circle.

14. Name a diameter of the circle.

15. Name a central angle of the circle.

16. Name a semicircle of the circle.

17. Name two minor arcs of the circle.

18. Name two major arcs of the circle.

Identify the given part of $\odot P$.

19. $\overline{AP}$ **20.** $\overline{AC}$ **21.** $\overline{ED}$ **22.** $\angle APB$

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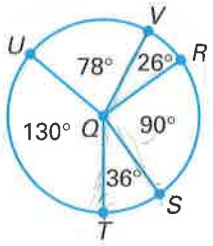
for Exercises 23-30

Find the degree measure of each arc by using the central angle measures given in $\odot Q$ at right.



23. $\overset{\frown}{TU}$ **24.** $\overset{\frown}{TSU}$ **25.** $\overset{\frown}{RT}$

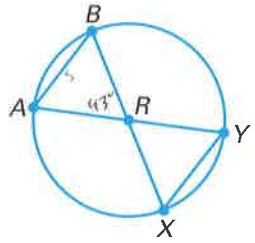
26. $\overset{\frown}{UR}$ **27.** $\overset{\frown}{VS}$ **28.** $\overset{\frown}{US}$

29. $\overset{\frown}{SUV}$ **30.** $\overset{\frown}{VTR}$

Determine the length of an arc with the given central angle measure, $m\angle P$, in a circle with the given radius, r. Round your answer to the nearest hundredth.

31. $m\angle P = 90°$; $r = 10$ **32.** $m\angle P = 60°$; $r = 3$ **33.** $m\angle P = 30°$; $r = 120$

Determine the degree measure of an arc with the given length, L, in a circle with the given radius, r.

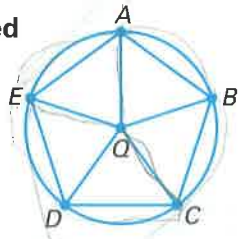


34. $L = 14$; $r = 70$ **35.** $L = 20$; $r = 100$

36. $L = 3$; $r = 15$ **37.** $L = 5$; $r = 25$

38. In $\odot R$ at right, if $m\angle ARB = 43°$ and $AB = 5$, find XY. Explain your reasoning.

Suppose that $ABCDE$ is a regular pentagon inscribed in $\odot Q$ and that $AQ = 2$. Find the following:



39. $m\angle AQB$ **40.** $m\overset{\frown}{AE}$ **41.** $m\overset{\frown}{ACE}$

42. length of $\overset{\frown}{AE}$ **43.** length of $\overset{\frown}{ACE}$

PROOF

44. Complete the converse of the Chords and Arcs Theorem below and prove your result.

The Converse of the Chords and Arcs Theorem

In a circle or in congruent circles, the chords of congruent arcs are ___?___. 9.1.6