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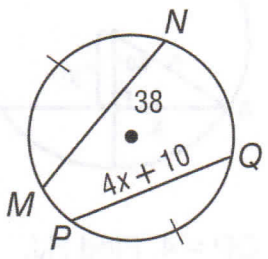
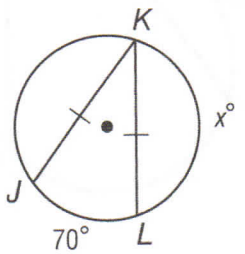
Arcs and Chords

ALGEBRA Find the value of *x* in each circle.

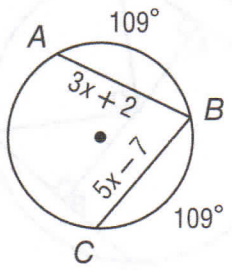
1.



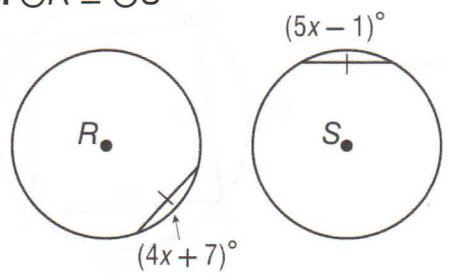
2.



3.



4. $\odot R \cong \odot S$



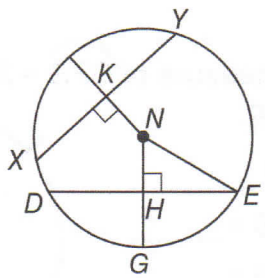
The radius of $\odot N$ is 18, $NK = 9$, and $m\widehat{DE} = 120$. Find each measure.

5. $m\widehat{GE}$

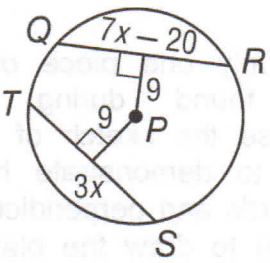
6. $m\angle HNE$

7. $m\angle HEN$

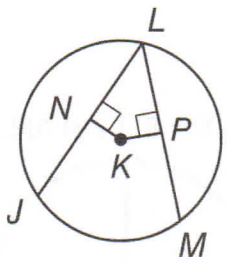
8. HN



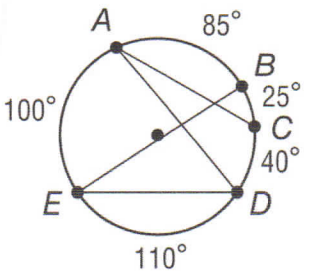
9. In $\odot P$, $QR = 7x - 20$ and $TS = 3x$. What is x?



10. In $\odot K$, $\overline{JL} \cong \overline{LM}$, $KN = 3x - 2$, and $KP = 2x + 1$. What is x?



11. GARDEN PATHS A circular garden has paths around its edge that are identified by the given arc measures. It also has four straight paths, identified by segments $\overline{AC}$, $\overline{AD}$, $\overline{BE}$, and $\overline{DE}$, that cut through the garden's interior. Which two straight paths have the same length?



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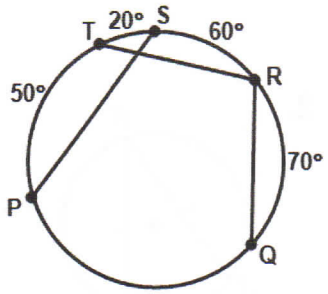
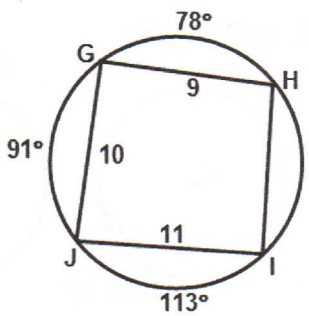
12. If PS = 12 and TR = 15, then find QR.

QR = _____



13. Find HI.

HI = _____



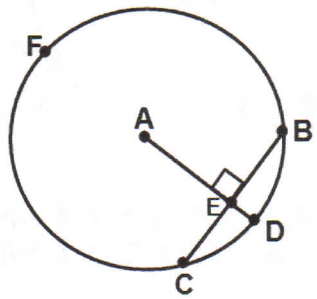
14. If the measure of $\overset{\frown}{CFB}$ = 220°, find the following.

$m\overset{\frown}{CB}$ = _____

$m\angle CAB$ = _____

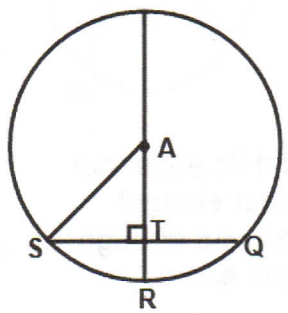
$m\angle BAD$ = _____

$m\overset{\frown}{CD}$ = _____



15. In circle A, SQ = 12 and AT = 8. Find AR.

AR = _____

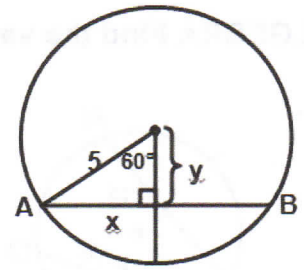


16. Find the indicated values.

x = _____

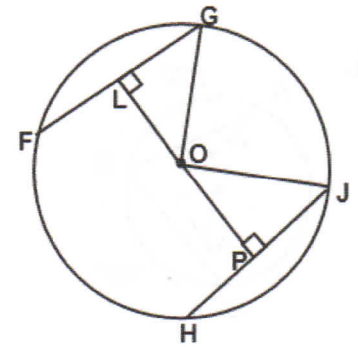
y = _____

$m\overset{\frown}{AB}$ = _____



17. FL = 3, GO = 5, and OP = 4. Find HJ.

HJ = _____



18. WATERMARKS For security purposes a jewelry company prints a hidden watermark on the logo of all its official documents. The watermark is a chord located 0.7 cm from the center of a circular ring that has a 2.5 cm radius. To the nearest tenth, what is the length of the chord?

19. ARCHAEOLOGY Only one piece of a broken plate is found during an archaeological dig. Use the sketch of the pottery piece below to demonstrate how constructions with chords and perpendicular bisectors can be used to draw the plate's original size.