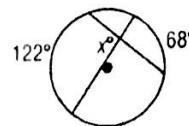


12. Find  $x$ .

- F. 122  
G. 95

- H. 68  
J. 61

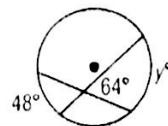


12. \_\_\_\_\_

13. Find  $y$ .

- A. 16  
B. 56

- C. 80  
D. 112

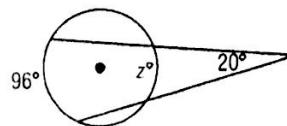


13. \_\_\_\_\_

14. Find  $z$ .

- F. 38  
G. 56

- H. 58  
J. 76

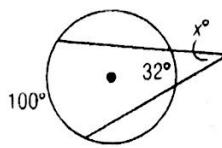


14. \_\_\_\_\_

15. Find  $x$ .

- A. 132  
B. 68

- C. 66  
D. 34



15. \_\_\_\_\_

18. Find the radius of the circle whose equation is  $(x + 3)^2 + (y - 7)^2 = 289$ .

- F. 7  
G. 17

- H. 34

- J. 289

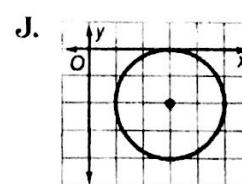
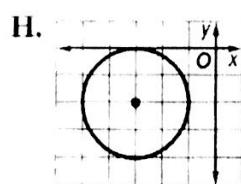
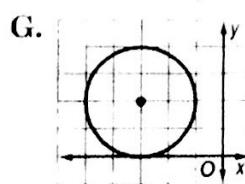
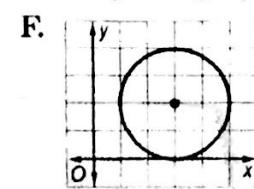
18. \_\_\_\_\_

19. Find the equation of a circle with center  $(0, 0)$  and radius 4.

- A.  $x^2 + y^2 = 4$   
B.  $x^2 + y^2 = 16$

- C.  $(x - 4)^2 + (y - 4)^2 = 16$   
D.  $4x + 4y = 16$

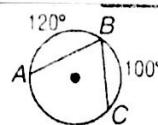
19. \_\_\_\_\_

20. Identify the graph of  $(x - 3)^2 + (y + 2)^2 = 4$ .

20. \_\_\_\_\_

9. Find  $m\angle ABC$ .

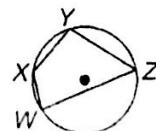
- A. 50  
B. 70



9. \_\_\_\_\_

10. If  $m\angle X = 126$ , find  $m\angle Z$ .

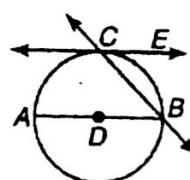
- F. 54  
G. 63



10. \_\_\_\_\_

For Questions 1–3, use  $\odot D$ .

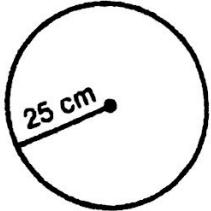
18. Name a radius.



19. Name a chord that is not a diameter.

20. Name a secant.

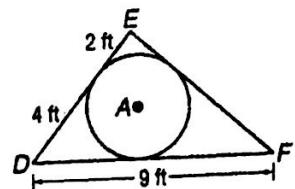
21.



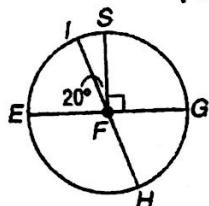
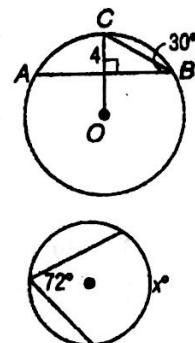
$$C = \underline{\hspace{2cm}}$$

22. The circumference of a steering wheel of a car is  $20\pi$  inches. What is the radius of the steering wheel?

23. If  $\overline{DE}$ ,  $\overline{EF}$ , and  $\overline{FD}$  are tangent to  $\odot A$ , find  $EF$ .

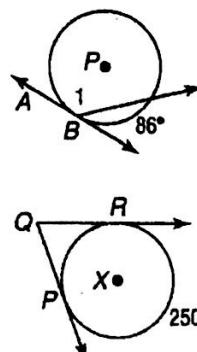


24. Find  $m\widehat{GH}$  and its arc length.  
 $r = 8$

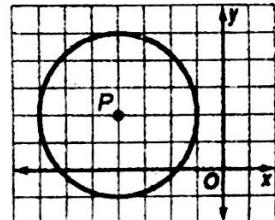
25. Find  $x$ .

27. In  $\odot X$ , chords  $\overline{AB}$  and  $\overline{CD}$  are congruent and  $\overline{AB}$  is 9 units from  $X$ . Find the distance from  $\overline{CD}$  to  $X$ .

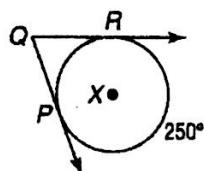
28. If  $\overline{AB}$  is tangent to  $\odot P$  at  $B$ , find  $m\angle 1$ .



34. Find the equation of  $\odot P$ .



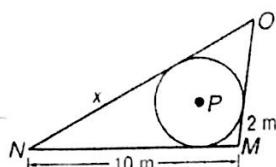
29. Find  $m\angle PQR$  if  $\overline{QP}$  and  $\overline{QR}$  are tangent to  $\odot X$ .



30. If  $\overline{MN}$ ,  $\overline{NO}$ , and  $\overline{MO}$  are tangent to  $\odot P$ , find  $x$ .

- A. 2 m  
B. 5 m

- C. 6 m  
D. 8 m



31. Draw a picture of a radius bisecting a chord. What angle do they make?

32. Find the center of the circle whose equation is  $(x + 15)^2 + (y - 20)^2 = 100$ .

33. Find the equation of a circle whose center is at  $(-1, 5)$  and radius is 8.