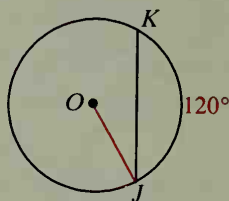


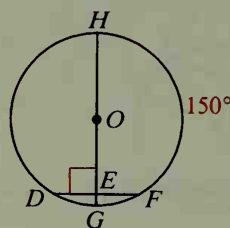
- B** 16. Write a paragraph proof of part (2) of Theorem 9-4. First list what is given and what is to be proved.

17.



If  $OJ = 10$ ,  $JK = \underline{\hspace{1cm}}$ .

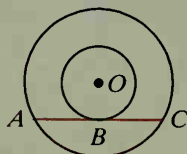
18.



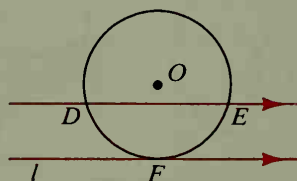
If  $OE = 8\sqrt{3}$ ,  $HG = \underline{\hspace{1cm}}$ .

19. A plane 5 cm from the center of a sphere intersects the sphere in a circle with diameter 24 cm. Find the diameter of the sphere.
20. A plane  $P$  cuts sphere  $O$  in a circle that has diameter 20. If the diameter of the sphere is 30, how far is the plane from  $O$ ?
21. Use trigonometry to find the measure of the arc cut off by a chord 12 cm long in a circle of radius 10 cm.
22. In  $\odot O$ ,  $m\widehat{RS} = 70$  and  $RS = 20$ . Use trigonometry to find the radius of  $\odot O$ .

State and prove a theorem suggested by the figure.

**C** 23.

24.



25.  $A, B, C$  are points on  $\odot O$  such that  $\triangle ABC$  is equilateral. If the radius of the circle is 6, what is the perimeter of  $\triangle ABC$ ?
26. Investigate the possibility, given a circle, of drawing two chords whose lengths are in the ratio 1:2 and whose distances from the center are in the ratio 2:1. If the chords can be drawn, find the length of each in terms of the radius. If not, prove that the figure is impossible.
27. Three parallel chords of  $\odot O$  are drawn as shown. Their lengths are 20, 16, and 12 cm. Find, to the nearest tenth of a centimeter, the length of chord  $\overline{XY}$  (not shown).

