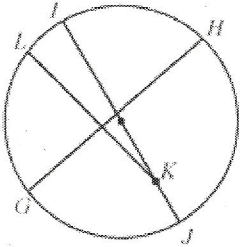


**Circles review EOCT**

**Multiple Choice**

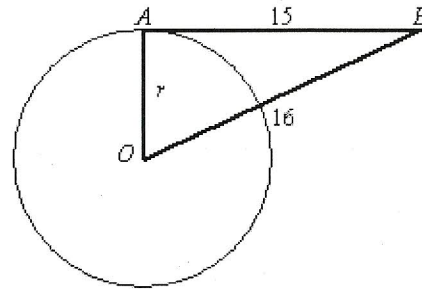
Identify the choice that best completes the statement or answers the question.

1. Identify two chords.

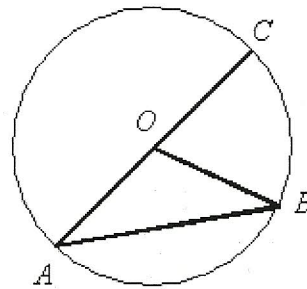


- a.  $\overline{IJ}$  and  $\overline{KL}$    b.  $\overline{GH}$  and  $\overline{KL}$    c.  $\overline{GH}$  and  $\overline{IJ}$   
 d.  $\overline{GI}$  and  $\overline{HJ}$
2. A circle is the set of all points in a plane that \_\_\_\_\_.  
 a. have a center   b. are equidistant from a given point  
 c. have a diameter   d. lie within a given radius
3. A segment with endpoints on a circle is a \_\_\_\_\_.  
 a. secant   b. radius   c. tangent   d. chord
4. If a circle has a diameter of 12, then it has \_\_\_\_\_.  
 a. a radius of 4   b. a radius of 24   c. a radius of 6  
 d. a diameter of 6
5. Two coplanar circles are concentric if \_\_\_\_\_.  
 a. they have the same center   b. they have exactly one point of intersection  
 c. they have no points of intersection   d. they have congruent radii
6. A line which intersects a circle at exactly one point is called \_\_\_\_\_.  
 a. a point of tangency   b. a tangent line   c. a chord  
 d. a secant

7. You are standing at point  $B$ . Point  $B$  is 16 feet from the center of the circular water storage tank and 15 feet from point  $A$ .  $\overline{AB}$  is tangent to  $\odot O$  at  $A$ . Find the radius of the tank.

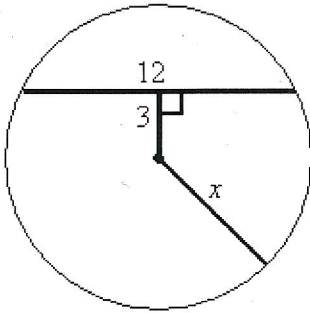


- a. 12.1 ft.   b. 21.9 ft.   c. 11.1 ft.   d. 5.6 ft.
8. Given: In  $\odot O$ ,  $m\widehat{BAC} = 290^\circ$ . Find  $m\angle B$ .



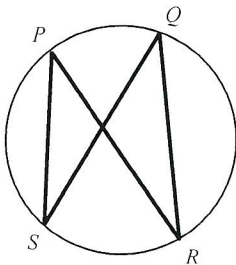
- a.  $14.5^\circ$    b.  $29^\circ$    c.  $17.5^\circ$    d.  $35^\circ$

9. Find the value of  $x$ .



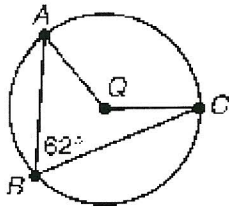
- a. 11.6 b. 12.4 c. 6.7 d. 8.0

10. Find  $m\angle PSQ$  if  $m\angle PSQ = 3y - 15$  and  $m\angle PRQ = 2y + 25$ .



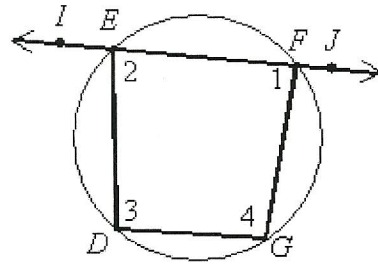
- a.  $40^\circ$  b.  $95^\circ$  c.  $105^\circ$  d.  $52.5^\circ$

11. Given  $\odot Q$  and  $m\angle B = 62^\circ$ , find  $m\widehat{AC}$ .



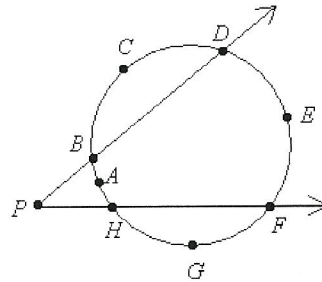
- a.  $62^\circ$  b.  $124^\circ$  c.  $236^\circ$  d.  $248^\circ$

12. Given:  $m\angle IED = 116^\circ$  and  $m\angle JFG = 100^\circ$   
Find the measure of each unknown angle. (not drawn to scale)



- a.  $m\angle 1 = 80^\circ, m\angle 2 = 64^\circ, m\angle 3 = 100^\circ, m\angle 4 = 116^\circ$   
 b.  $m\angle 1 = 80^\circ, m\angle 2 = 64^\circ, m\angle 3 = 116^\circ, m\angle 4 = 100^\circ$   
 c.  $m\angle 1 = 64^\circ, m\angle 2 = 80^\circ, m\angle 3 = 100^\circ, m\angle 4 = 116^\circ$   
 d.  $m\angle 1 = 64^\circ, m\angle 2 = 80^\circ, m\angle 3 = 116^\circ, m\angle 4 = 100^\circ$

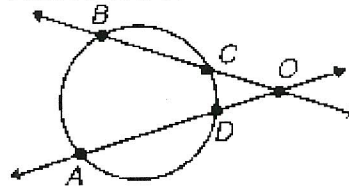
Use the diagram (not drawn to scale) and the given information.



13.  $m\widehat{BCD} = 114^\circ, m\widehat{DEF} = 94^\circ, m\widehat{FGH} = 136^\circ$ , and  $m\widehat{HAB} = 16^\circ$   
Find  $m\angle FPD$ .

- a.  $39^\circ$  b.  $21^\circ$  c.  $16^\circ$  d.  $98^\circ$

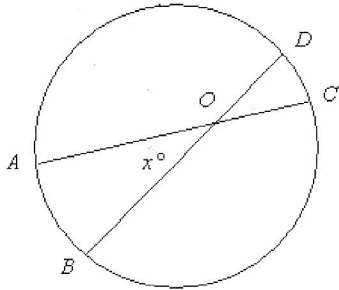
14.  $m\widehat{AB} = 82^\circ, m\widehat{CD} = 30^\circ$   
Find  $m\angle DOC$ .



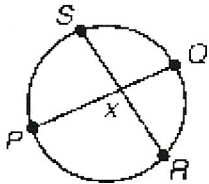
Not drawn to scale

- a.  $112^\circ$  b.  $56^\circ$  c.  $26^\circ$  d.  $52^\circ$

Use the diagram (not draw to scale) and the given information.



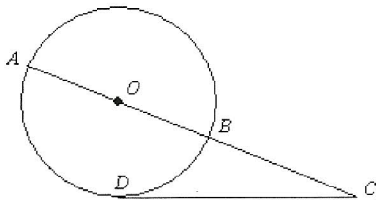
15. Find the value of  $x$  if  $m\widehat{AB} = 20^\circ$  and  $m\widehat{CD} = 62^\circ$ .  
 a.  $41^\circ$  b.  $43^\circ$  c.  $21^\circ$  d.  $20.5^\circ$
16. Given  $m\widehat{SQ} = 106^\circ$ ,  $m\widehat{PR} = 120^\circ$ , find  $x$ .



Not drawn to scale

- a.  $113^\circ$  b.  $134^\circ$  c.  $226^\circ$  d.  $67^\circ$

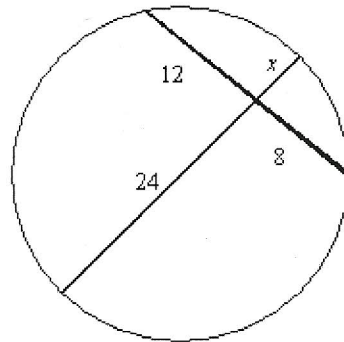
Use the diagram (not drawn to scale) and the given information to find the diameter of the circle. Round your answer to the nearest tenth.



17.  $BC = 18$  and  $DC = 22$ .  
 a. 44.9 b. 8.9 c. 7.3 d. 6.2

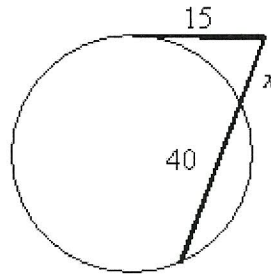
Find the value of  $x$ .

18.



- a. 4 b. 8 c. 24 d. 12

19.



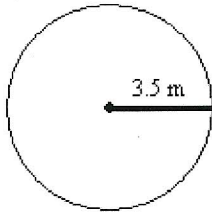
- a. 3 b. 5 c. none of these d. 8

20. If a circle has a diameter of 7 inches, what is the circumference rounded to the nearest whole number? Use  $\pi \approx 3.14$ .  
 a. 22 in. b. 44 in. c. 38 in. d. 11 in.
21. A circle has a circumference of 50 meters. Find its diameter.  
 a. 12.5 m b. 15.92 m c. 7.96 m d. 25 m
22. For a circle of radius 5 feet, find the length of an arc  $s$  with a measure of  $28^\circ$ .  
 a.  $s = \frac{7}{9}\pi$  feet b.  $s = \frac{7}{18}\pi$  feet  
 c.  $s = \frac{1}{36}\pi$  feet d.  $s = 140\pi$  feet
23. Find the length of a  $40^\circ$  arc in a circle with a radius of 4.  
 a.  $\frac{8\pi}{9}$  b.  $8\pi$  c.  $\frac{9\pi}{8}$  d.  $\frac{16\pi}{9}$

24. A park has a circular swimming pool. The diameter of the pool is 19 ft. What is the distance traveled if you swim around the edge of the pool once?  
Use  $\pi \approx 3.14$ .  
a. 38 ft b. 59.66 ft c. 119.38 ft d. 179.07 ft

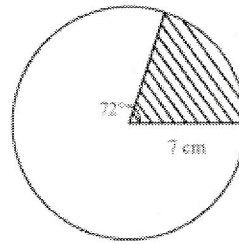
**Find the area:**

25.



- a.  $38.465 \text{ m}^2$  b.  $9.61625 \text{ m}^2$  c.  $21.98 \text{ m}^2$   
d.  $153.86 \text{ m}^2$

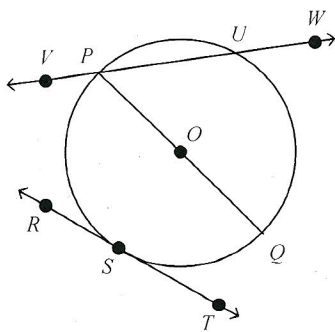
26. Find the area of the shaded region.



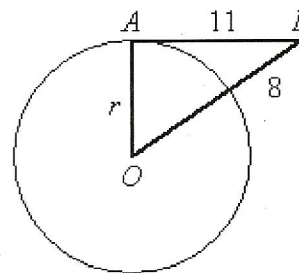
- a.  $153.94 \text{ cm}^2$  b.  $30.79 \text{ cm}^2$  c.  $123.15 \text{ cm}^2$   
d.  $38.48 \text{ cm}^2$
27. Find the surface area of a sphere that has a diameter of 16 cm. Express your answer in terms of  $\pi$ .  
a.  $256\pi \text{ cm}^2$  b.  $64\pi \text{ cm}^2$  c.  $1024\pi \text{ cm}^2$   
d.  $\frac{2048}{3} \pi \text{ cm}^3$
28. What is the surface area of a sphere with radius 4.7 feet?  
a.  $434.9 \text{ ft}^2$  b.  $92.5 \text{ ft}^2$  c.  $69.4 \text{ ft}^2$  d.  $277.6 \text{ ft}^2$
29. Find the volume of a sphere 4 ft in diameter. Use  $\pi \approx 3.14$  and round your answer to the nearest tenth.  
a.  $16.7 \text{ ft}^3$  b.  $18.8 \text{ ft}^3$  c.  $33.5 \text{ ft}^3$  d.  $25.1 \text{ ft}^3$

**Short Answer**

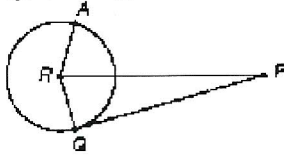
30. Identify the diameter for circle  $O$ .



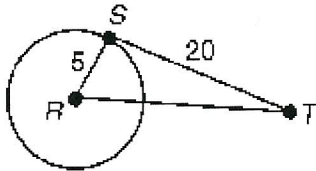
31.  $\overline{AB}$  is tangent to  $\odot O$  at  $A$  (not drawn to scale). Find the length of the radius  $r$ , to the nearest tenth.



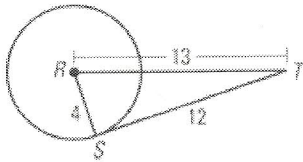
32. Given  $RP = 22$ ,  $RA = 6$ , and  $\overline{PQ}$  is tangent to  $\odot R$  at  $Q$ , find  $PQ$ .



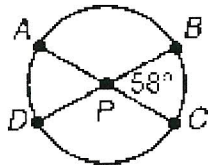
33. Given  $\overline{ST}$  is tangent to  $\odot R$  at  $S$ , find  $RT$ .



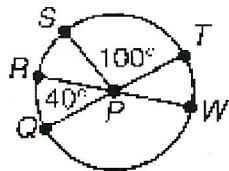
34. In the diagram,  $\overline{RS}$  is a radius of circle  $R$ . Is  $\overline{ST}$  tangent to circle  $R$ ? Explain.



35. Find the measure of  $\widehat{DBC}$  in  $\odot P$ .

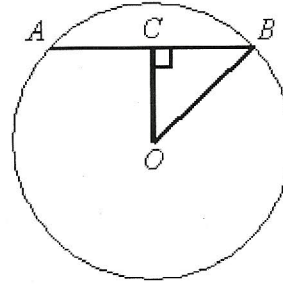


36. If  $\overline{QT}$  and  $\overline{RW}$  are diameters in  $\odot P$ , find  $m\widehat{QW}$ .

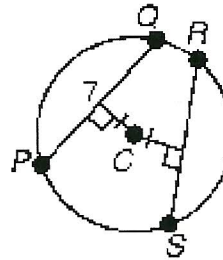


37. Points  $Q$ ,  $R$ , and  $S$  lie on circle  $P$ . If  $m\angle QPR = 90^\circ$  and  $m\angle QPS = 120^\circ$ , what are the possible measures for  $\widehat{RS}$ ? Draw a diagram to support your explanation.

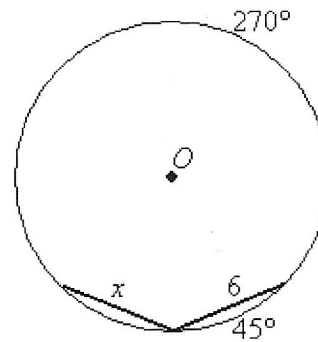
38. Given circle  $O$  with radius 5 and  $OC = 3$ . Find the length of  $AB$ .



39. Find  $RS$  in  $\odot C$ . Explain your reasoning.



40. Find the value of  $x$  to the nearest tenth.



41. Find  $m\widehat{BC}$  and  $m\angle D$ .

