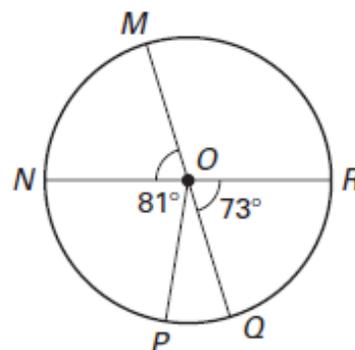


Worksheet I- Unit 9 Test Review

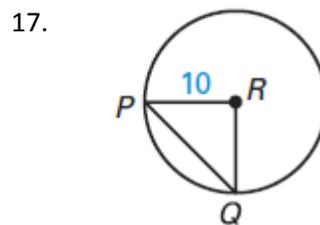
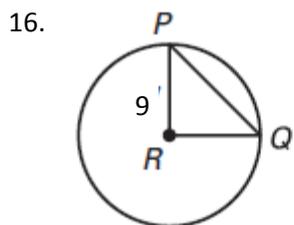
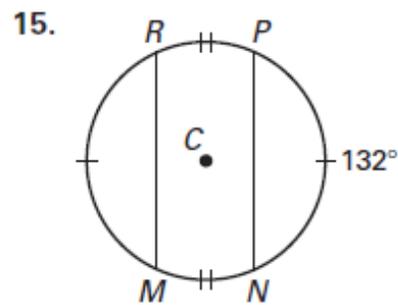
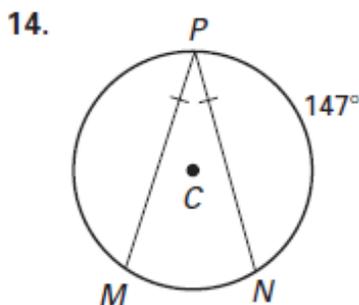
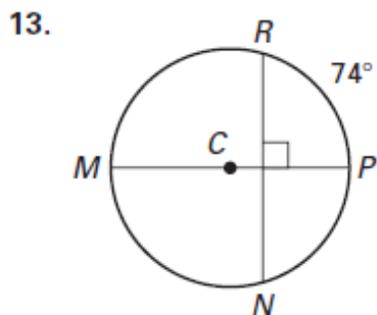
PART 1:

\overline{MQ} and \overline{NR} are diameters. Find the indicated measures.

- | | |
|----------------------|----------------------|
| 1. $m\widehat{MN}$ | 2. $m\widehat{NQ}$ |
| 3. $m\widehat{NQR}$ | 4. $m\widehat{MRP}$ |
| 5. $m\widehat{PN}$ | 6. $m\widehat{MNQ}$ |
| 7. $m\widehat{QR}$ | 8. $m\widehat{MR}$ |
| 9. $m\widehat{QMR}$ | 10. $m\widehat{PQ}$ |
| 11. $m\widehat{PRN}$ | 12. $m\widehat{MQN}$ |



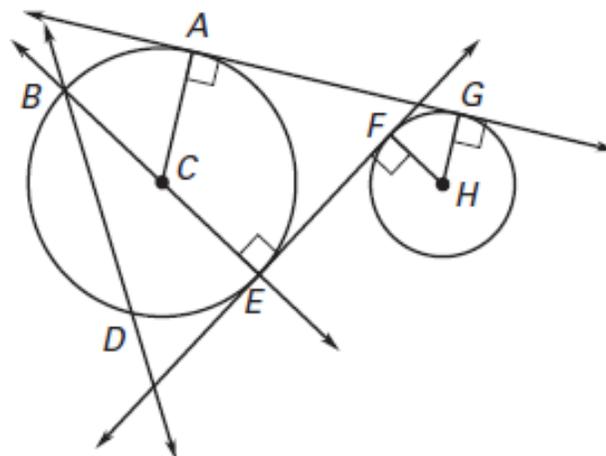
Find the measure of \widehat{MN} .



Part 2:

Name the term that best describes the notation.

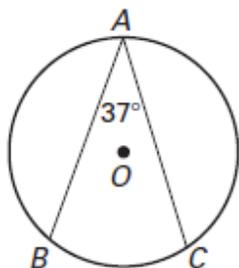
1. F
2. \overleftrightarrow{FE}
3. \overline{HG}
4. \overline{DB}
5. C
6. \overline{BE}
7. \overleftrightarrow{DB}
8. \overleftrightarrow{AG}



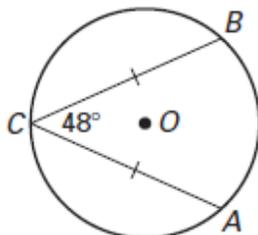
Part 3:

Find the measure of the indicated arc or angle in $\odot O$.

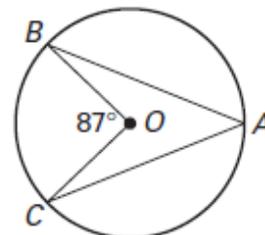
1. $m\widehat{BC} = \underline{\quad ? \quad}$



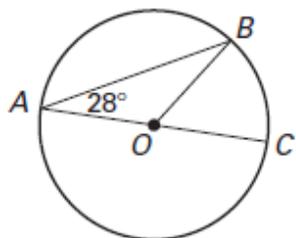
2. $m\widehat{BC} = \underline{\quad ? \quad}$



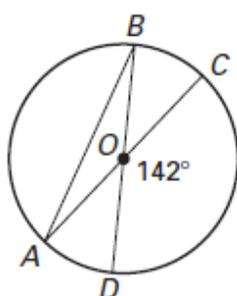
3. $m\angle BAC = \underline{\quad ? \quad}$



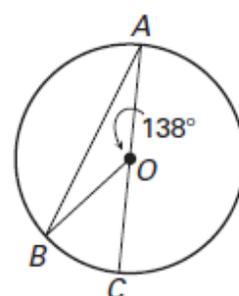
4. $m\widehat{BC} = \underline{\quad ? \quad}$



5. $m\angle BAC = \underline{\quad ? \quad}$



6. $m\angle BAC = \underline{\quad ? \quad}$



$m\widehat{CD} = 86^\circ$ and $m\widehat{BE} = 95^\circ$.

7. $m\angle ABC$

8. $m\angle CED$

9. $m\angle BDE$

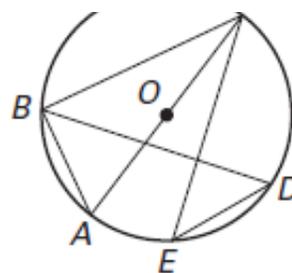
10. $m\angle CBD$

11. $m\angle ABD$

12. $m\angle BCE$

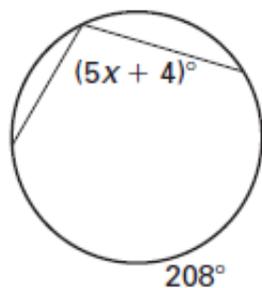
13. $m\widehat{AD}$

14. $m\widehat{ABC}$

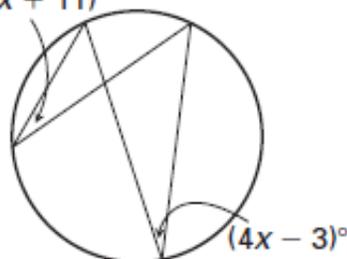


Find the value of x .

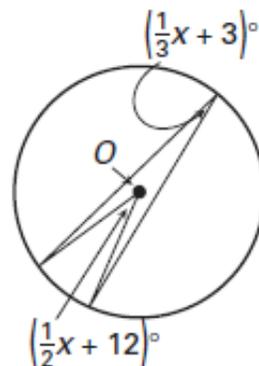
15.



16. $(2x + 11)^\circ$

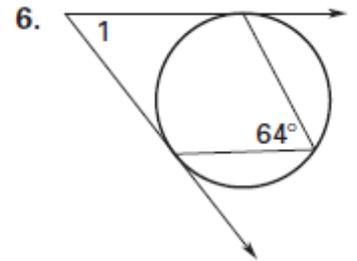
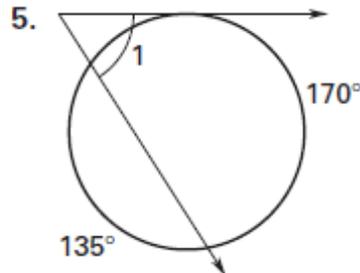
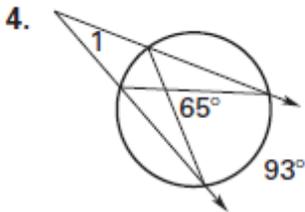
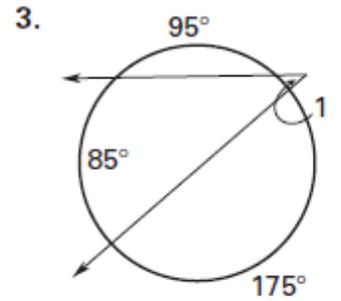
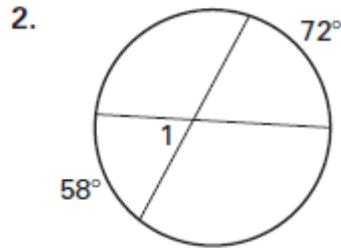
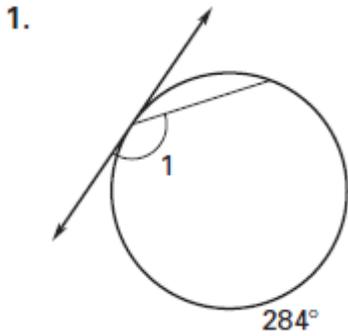


17. center O

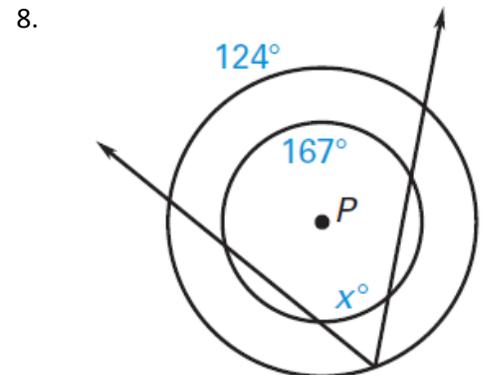
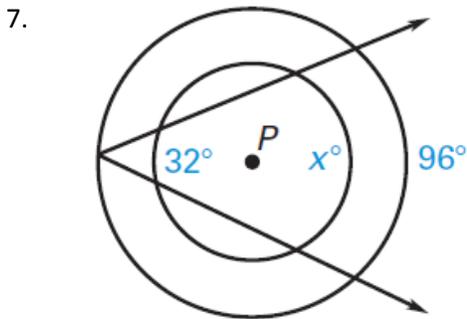


Part 4:

Find the measure of $\angle 1$.



In Exercises 7 and 8, the circles have center P . Find the value of x .



Part 5:

- 1) The device shown is a 10 second game timer. The top button starts and stops the timer. For game play, the timer is started at 10 (as shown) and moves counterclockwise. If a player starts the timer at 10 and stops it after 8.5 seconds, what is the measure of the arc created? (The arc created is the arc that is traced out by the tip of the pointer as it moves.) **Round your answer to the nearest tenth.**



Part 6:

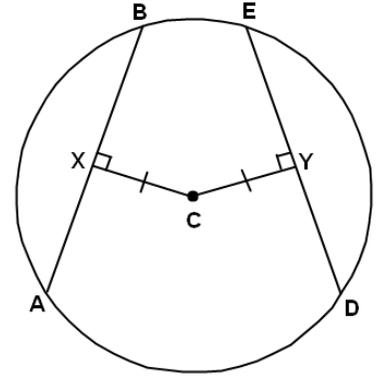
Use circle C at right for # 1 & 2.

1. If $AB = 12$ and $CY = 3$, find the length of the radius.

2. If $m\widehat{BE} = 30^\circ$ and $m\widehat{AD} = 120^\circ$, then find

$m\widehat{AB} =$ _____

$m\widehat{ED} =$ _____



True & False

_____ 3. A tangent segment of a circle is sometimes a chord of the same circle.

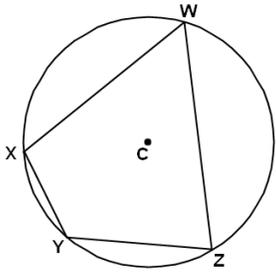
_____ 4. The closer a chord is to the center of a circle, the longer is its length.

_____ 5. If a right triangle is inscribed in a circle, then one of its sides must be a diameter.

_____ 6. The measure of a central angle is half of its intercepted arc.

_____ 7. If two circles have no common tangents, then one circle must be completely inside of the other circle.

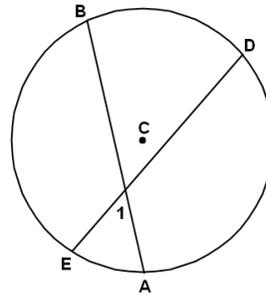
8. $m\angle Y = 135$



$m\angle W = \underline{\hspace{2cm}}$

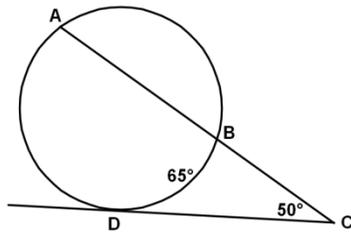
$m\angle XYZ = \underline{\hspace{2cm}}$

9. $m\angle A = 17$ and $m\angle D = 55$

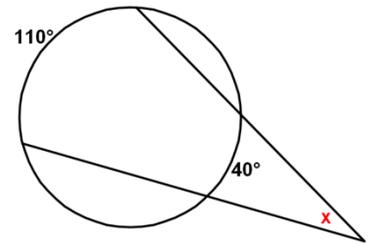


$m\angle 1 = \underline{\hspace{2cm}}$

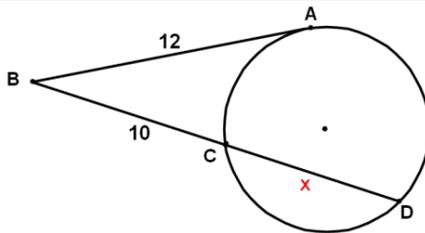
10. Find $m\angle B$



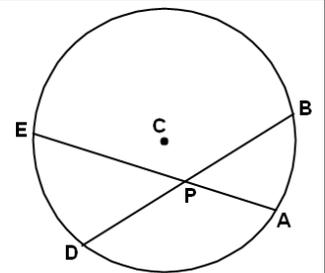
11. Find the value of x



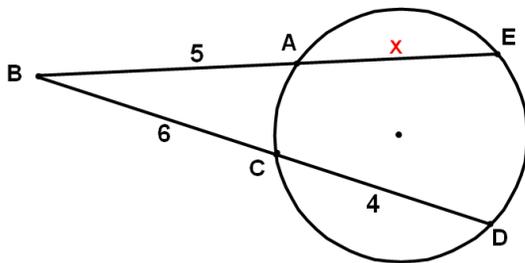
12. Solve for x



13. $DB = 15$, $PB = 8$, $EP = 9$.
Find PA .



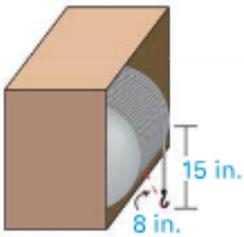
14. Find PA



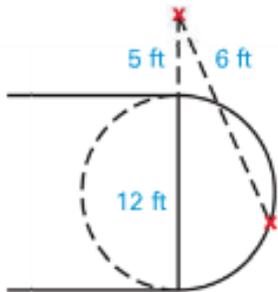
15. You challenge a friend to find a way to use three 10-foot boards to mark the location of the center of a circular swimming pool which has a diameter of 12 feet. Your friend centers the top board on the other two boards and makes sure its ends are the same distance from the edge of the pool as shown in the diagram provided. Then your friend marks a spot on the exact center of the top board. Explain why this IS or IS NOT the center of the pool.



16. A large industrial winch is enclosed as shown in the diagram. There are 15 inches of cable hanging free off of the winch's spool. The distance from the end of the cable to the spool is 8 inches. What is the diameter of the spool?



17. The Xs show the positions of two basketball teammates relative to the circular 'key' on a basketball court. The player outside the key passes the ball to the player on the key. To the nearest tenth of a foot, how long is the pass from player 1 to player 2.

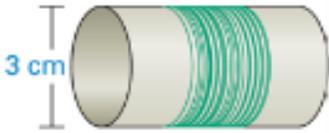


18. You want to estimate the diameter of a circular water tank. You stand at a location 10.5 feet from the edge of the circular tank. From this position, your distance to a point of tangency on the tank is 23 feet.

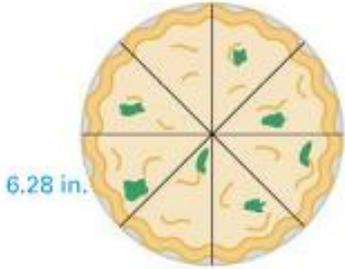
A. Draw a diagram of the situation. Label your position as C and the radius of the tank as r .

B. Determine the length of the radius to the nearest tenth of a foot.

19. A spool of thread contains 150 revolutions of thread. The diameter of the spool is 3 centimeters. Determine the length of the thread to the nearest centimeter.



20. A spinach quiche is sliced into 8 equal pieces. The arc length of one piece of quiche is 6.28 inches. Determine the diameter of the quiche.



21. Three pizzas with the given diameters are cut. Showing your work for each pizza, determine which cut produces the largest pieces.

A. An 8-inch pizza cut into 6 congruent slices.

B. A 12-inch pizza cut into 8 congruent slices.

C. A 16-inch pizza cut into 10 congruent slices.

22. A rubber shell filled with air forms a rubber ball. The shell's outer diameter is 65 millimeters. Its inner diameter is 56 millimeters. Determine the volume of rubber used to make the ball. (round to the nearest cubic centimeter)

23. A softball has a surface area of about 38.52 square inches. Rounding all answers to the hundredth, determine the following:

- A. The radius of the softball

- B. The circumference of a great circle of the softball

- C. The volume of the softball

24. A standard golf ball has a diameter of 1.68 inches. Golf balls are often sold in a box of four. Assume that the golf balls are packed tightly so that they touch the lateral sides and bases of the box.

- A. What is the surface area of a golf ball?

- B. What is the volume of a golf ball?

- C. What is the amount of volume inside the box that is not taken up by the golf balls?



For # 25 – 31, draw the diagrams needed. Give both the exact answer (in terms of π) & the approximate answer (rounded to the nearest hundredths place).

25. What's the length of an arc in a circle that has a central angle of 80° & a radius of 7 meters?

EXACT _____ Approximate _____

26. The length of an arc is 28π cm. Find the radius of the circle if the central angle is 144° .

EXACT _____ Approximate _____

27. Find the area of a sector if the central angle is 25° and the diameter is 10 yards.

EXACT _____ Approximate _____

28. The area of a sector is 15π in². Find the length of the radius if the central angle is 60° .

EXACT _____ Approximate _____

29. Sphere A has a radius of 124 cm. Sphere B has a radius of 31 cm.

A. How does the volume of sphere B compare to the volume of sphere A?

B. How does the surface area of sphere A compare to the surface area of sphere B?

30. The diameter of a sphere is tripled.

A. What will happen to the surface area of the sphere?

B. What will happen to the volume of the sphere?

31. If the radius of the larger of two spheres (sphere A) is multiplied by $\frac{1}{2}$ to obtain the radius of the smaller sphere (sphere B):

A. How does the volume of sphere A compare to the volume of sphere B?

B. How does the surface area of sphere B compare to the surface area of sphere A?

Part 7:

Convert each degree measure into radians and each radian measure into degrees.

1) $\frac{7\pi}{4}$

2) 15°

3) 225°

4) 40°

5) $\frac{3\pi}{4}$

6) 10°

Convert each decimal degree measure into degrees-minutes-seconds and each degrees-minutes-seconds into decimal degrees.

7) $66^\circ 35' 42''$

8) $290^\circ 43' 39''$

9) 247.8275°

10) $94^\circ 1' 57''$

11) 176.9425°

12) 221.37°