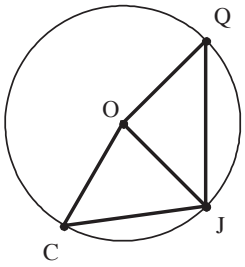
Name _____ Class _____ Date _____

Practice 11-1

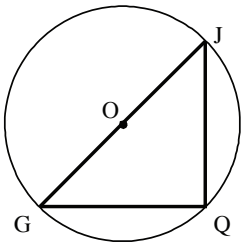
Center, Radius, and Diameter

1. What are the radii of the circle shown with O as the center?



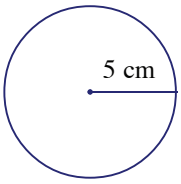
- ❍ A. $\overline{JC}$, $\overline{QO}$, and $\overline{QJ}$
- ❍ B. $\overline{JO}$, $\overline{QO}$, and $\overline{CO}$
- ❍ C. $\overline{JO}$, $\overline{QC}$, and $\overline{CJ}$
- ❍ D. $\overline{JQ}$, $\overline{QC}$, and $\overline{CJ}$

2. Which is the diameter of the circle shown?

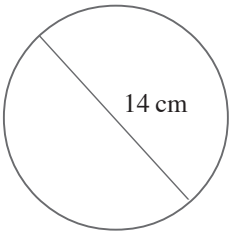


- ❍ A. $\overline{GO}$
- ❍ B. $\overline{QG}$
- ❍ C. $\overline{JO}$
- ❍ D. $\overline{JG}$

3. Find the length of the diameter of the circle.



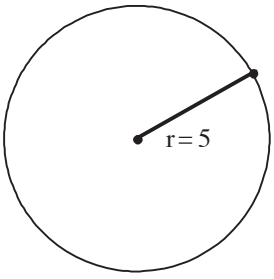
4. The length of the diameter, d, of the circle is 14 cm. Find the length of the radius, r, of the circle.



5. The radius of a circle is 5 cm. 3x + 7 represents the length of the diameter.

a) Write an equation for x.

b) Find the value of x.



6. The length of the radius of the dartboard is 9 in. The diameter is represented by the expression 3x + 3.

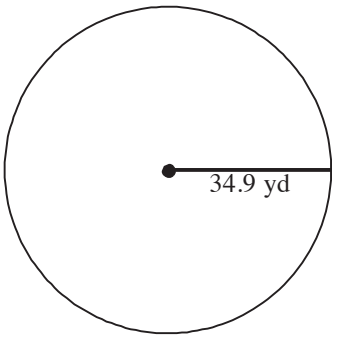
a) Which equation can you use to solve for x?

❍ A. 3x + 3 = 18
❍ B. 3x + 3 = 11
❍ C. 3x + 3 = 9
❍ D. 3x + 3 = 7

b) Solve for x.

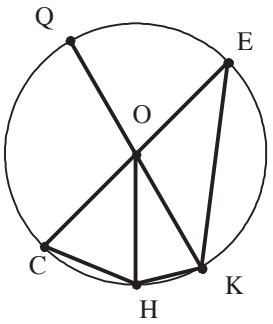
7. a) Writing Find the diameter of the circle.

b) Describe the relationships among the center, radius, and diameter of a circle.



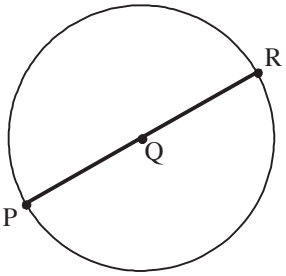
8. a) Reasoning Which segment(s) of the circle are diameters? Check all that apply.

❑ A. $\overline{EC}$
❑ B. $\overline{KC}$
❑ C. $\overline{EO}$
❑ D. $\overline{CO}$
❑ E. $\overline{EQ}$
❑ F. $\overline{KQ}$



b) Explain the difference between segments that are diameters and segments that are not diameters.

9. Error Analysis The expression x + 7 represents $\overline{PQ}$, the radius of the circle. The length of $\overline{PR}$ is 18 cm. Michael says the value of x is 11. Maya says the value of x is 2. One of them is correct.



a) Find the value of x.

b) Decide which error Michael or Maya might have made.

❍ A. Maya wrote the equation x + 7 = 18 to solve for x. She should have first used d = 2r to find the radius.
❍ B. Michael wrote the equation x + 7 = 18 to solve for x. He should have first used d = 2r to find the diameter.
❍ C. Maya wrote the equation x + 7 = 18 to solve for x. She should have first used d = 2r to find the diameter.
❍ D. Michael wrote the equation x + 7 = 18 to solve for x. He should have first used d = 2r to find the radius.

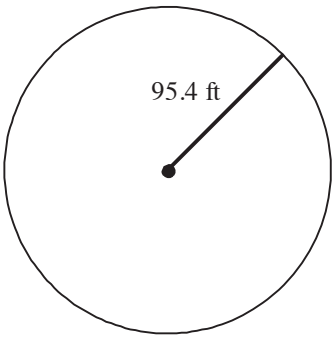
10. Weather The diameter of the eye of a certain hurricane was 70 miles. The radius is represented by 8x + 3.

a) Which equation can you use to find the value of x?

- ❍ A. 8x + 3 = 140
- ❍ B. 8x + 3 = 35
- ❍ C. 8x – 3 = 70
- ❍ D. 8x + 3 = 70

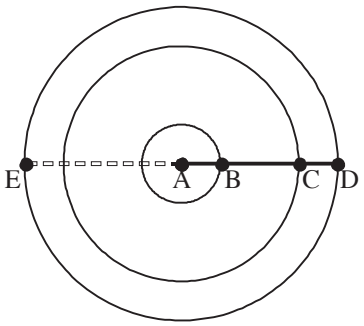
b) Find the value of x.

11. a) Open-Ended Find the diameter of the circle.

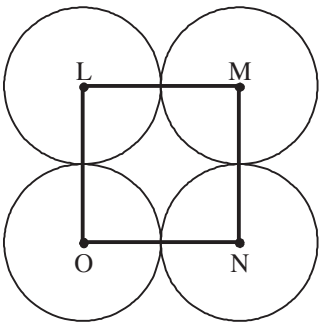


b) Describe a situation where it might be helpful to find the diameter given the radius.

12. $\overline{AB}$ has length 19 cm, $\overline{BC}$ has length 23 cm, and $\overline{CD}$ has length 17 cm. What is the length of the diameter, $\overline{ED}$, if the radius is $\overline{AD}$?



13. The design for a T-shirt logo is shown. The points L, M, N, and O are centers of the circles. The radius of each circle is 9 cm. The perimeter of the square is represented by 4(6x – 36).

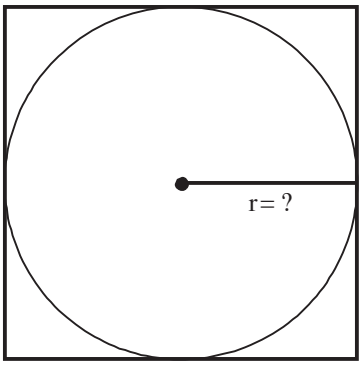


a) Which is an equation for x?

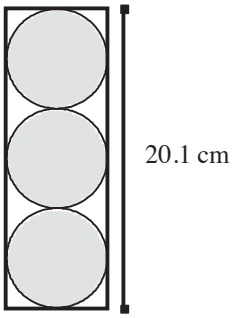
- ❍ A. 4(6x – 36) = 18
- ❍ B. (6x – 36) = 9
- ❍ C. 4(6x – 36) = 72
- ❍ D. 4(6x – 36) = 9

b) Find the value of x.

14. Challenge The figure shows a circle inscribed in a square. The perimeter of the square is 97.6 cm. What is the length of the radius?



15. Challenge Tennis balls are sold in packages of three. The length of the package is 20.1 cm. 4x – 20.65 represents the radius of one tennis ball.



a) Which equation can you use to find the value of x?

- ❍ A. 4x – 20.65 = 6.7
- ❍ B. 4x – 20.65 = 20.1
- ❍ C. 4x – 20.65 = 10.05
- ❍ D. 4x – 20.65 = 3.35

b) Find the value of x.