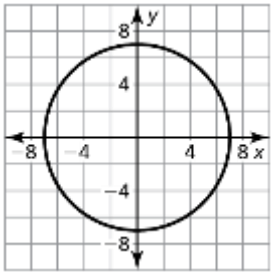
Name _____ _ Hour _____

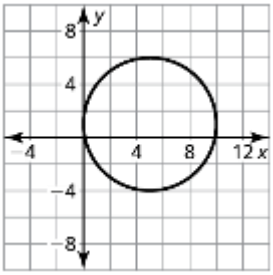
HW 10.7 Circles in the Coordinate Plane

In Exercises 1–4, write the standard equation of the circle with the given center and radius.

1.



2.



3. a circle with center $(0, 0)$ and radius 8

4. a circle with center $(0, -5)$ and radius 2

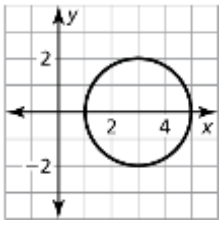
In Exercises 5 and 6, use the given information to write the standard equation of the circle.

5. The center is $(0, 0)$, and a point on the circle is $(3, -4)$.

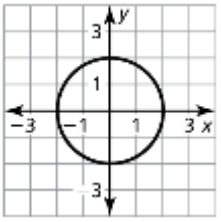
6. The center is $(3, -2)$, and a point on the circle is $(23, 19)$.

In Exercises 7–9, match each graph with its equation.

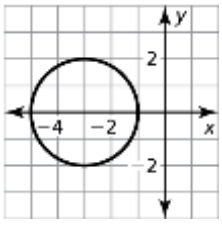
7.



8.



9.



A. $x^2 + y^2 = 4$

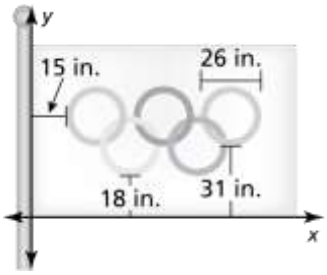
B. $(x - 3)^2 + y^2 = 4$

C. $(x + 3)^2 + y^2 = 4$

10. The equation of a circle is $x^2 + y^2 - 6y + 9 = 4$. Find the center and radius of the circle. Then graph the circle.

11. Prove or disprove that the point $(-3, 3)$ lies on the circle centered at the origin with radius 4.

12. You are using a math software program to design a pattern for an Olympic flag. In addition to the dimensions shown in the diagram, the distance between the outer edges any two adjacent rings in the same row is 3 inches.



a. Use the given dimensions to write equations representing the outer circles of the five rings. Use inches as units in a coordinate plane with the lower left corner of the flag on the origin.

b. Each ring is 3 inches thick. Explain how you can adjust the equations of the outer circles to write equations representing the inner circles.