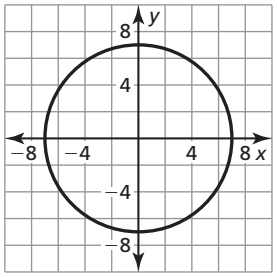
Name_____ Date _____

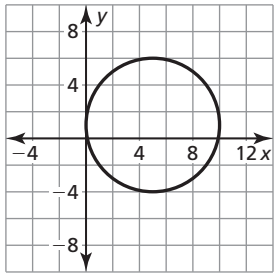
10.7 Practice A

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

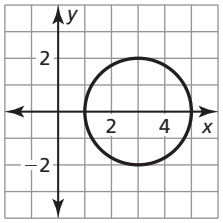
In Exercises 5 and 6, use the given information to write the standard equation of the circle.

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

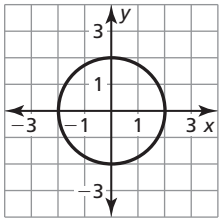
6. The center is $(3, -2)$, and a point on the circle is $(23, 19)$.

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

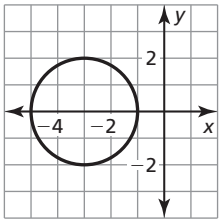
7.



8.



9.



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

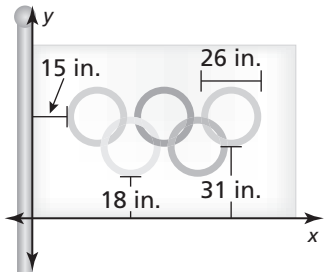
B. $(x - 3)^2 + y^2 = 4$

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.

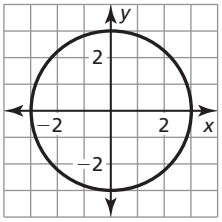
b. Each ring is 3 inches thick. Explain how you can adjust the equations of the outer circles to write equations representing the inner circles.

Name _____ Date _____

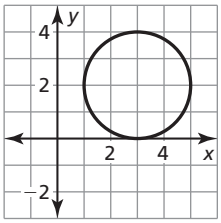
10.7 Practice B

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

1.



2.



3. a circle with center $(4, -7)$ and radius 4

4. a circle with center $(-3, 0)$ and radius 5

In Exercises 5–7, 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 $(1, 0)$.

6. The center is $(4, -1)$, and a point on the circle is $(-1, -1)$.

7. The center is $(2, 4)$, and a point on the circle is $(-3, 16)$.

In Exercises 8–11, find the center and radius of the circle. Then graph the circle.

8. $x^2 + y^2 = 100$

9. $(x - 2)^2 + (y - 9)^2 = 4$

10. $x^2 + y^2 + 4y + 4 = 36$

11. $x^2 - 2x + 5 + y^2 = 8$

In Exercises 12 and 13, prove or disprove the statement.

12. The point $(-3, 4)$ lies on the circle centered at the origin with radius 5.

13. The point $\left(2, \sqrt{3}\right)$ lies on the circle centered at the origin and containing the point $(-3, 0)$.

14. After an earthquake, you are given seismograph readings from three locations where the coordinates are miles.

The epicenter is 5 miles away from $A(2, 1)$.

The epicenter is 6 miles away from $B(-2, -2)$.

The epicenter is 4 miles away from $(-6, 4)$.

a. Graph three circles in one coordinate plane to represent the possible epicenter locations determined by each of the seismograph readings.

b. What are the coordinates of the epicenter?

c. People could feel the earthquake up to 9 miles from the epicenter. Could a person at $(4, -5)$ feel it? Explain.