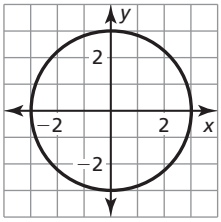
Name_____ Date _____

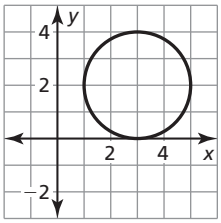
10.7 Practice B

In Exercises 1–4, write the standard equation of the circle.

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.

15. Solve the system $x^2 + y^2 = 14, y = 4$.