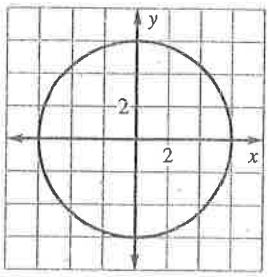
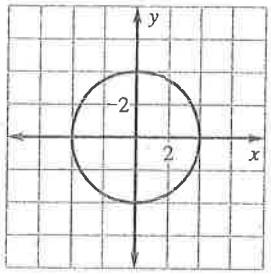
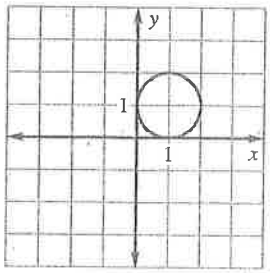
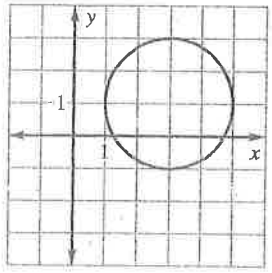
10.7 wksht

Write the standard equation of the circle.

1. 

2. 

3. 

4. 

Write the standard equation of the circle with the given center and radius.

5. Center (0, 0), radius 9
6. Center (1, 3), radius 4
7. Center (−3, 0), radius 5
8. Center (4, −7), radius 13
9. Center (0, 14), radius 14
10. Center (−12, 7), radius 6

Use the given information to write the standard equation of the circle.

11. The center is (0, 0), and a point on the circle is (4, 0).
12. The center is (0, 0), and a point on the circle is (3, −4).
13. The center is (2, 4), and a point on the circle is (−3, 16).
14. The center is (3, −2), and a point on the circle is (23, 19).
15. The center is (−43, 5), and a point on the circle is (−34, 17).
16. The center is (17, 24), and a point on the circle is (−3, 9).

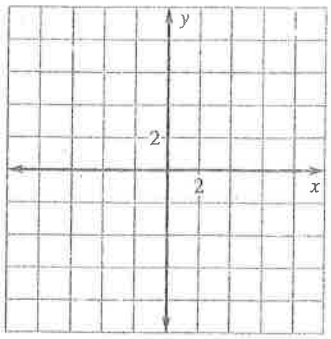
Determine the diameter of the circle with the given equation.

17. $x^2 + y^2 = 100$
18. $(x - 12)^2 + (y + 5)^2 = 64$
19. $(x - 2)^2 + (y - 9)^2 = 4$
20. $(x + 16)^2 + (y + 15)^2 = 81$

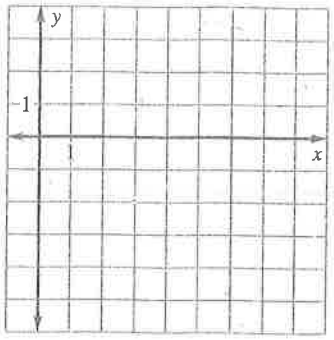
10.7 wksht

Graph the equation.

21. $x^2 + y^2 = 64$



22. $(x - 4)^2 + (y + 1)^2 = 16$



Determine whether the point lies on the circle described by the equation $(x - 3)^2 + (y - 8)^2 = 100$.

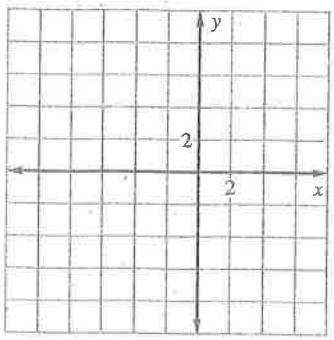
23. (0, 0) **24.** (13, 8) **25.** (−5, 2) **26.** (11, 5)

27. Earthquakes After an earthquake, you are given seismograph readings from three locations, where the coordinate units are miles.

At $A(2, 1)$, the epicenter is 5 miles away.

At $B(-2, -2)$, the epicenter is 6 miles away.

At $C(-6, 4)$, the epicenter is 4 miles away.

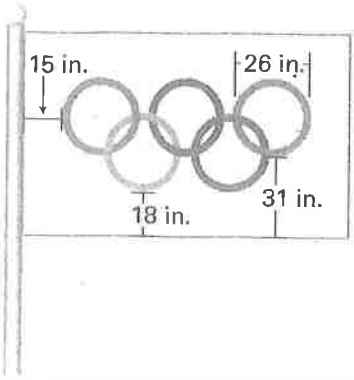


a. Graph three circles in one coordinate plane to represent the possible epicenter locations determined by each of the seismograph readings.

b. What are the coordinates of the epicenter?

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

28. Olympic Flag 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 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 at 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.