

12-5 Practice

Form G

Circles in the Coordinate Plane

Find the center and radius of each circle.

1. $x^2 + y^2 = 36$

2. $(x - 2)^2 + (y - 7)^2 = 49$

Write the standard equation of each circle.

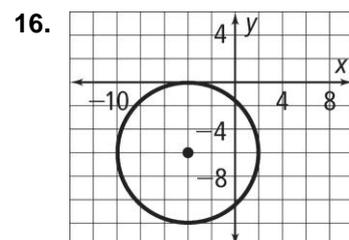
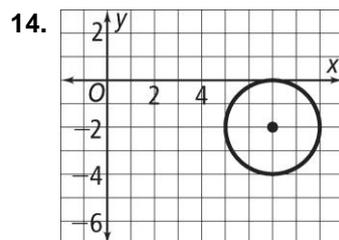
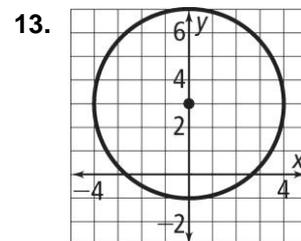
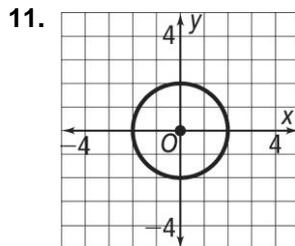
5. center $(0, 0)$; $r = 7$

7. center $(5, 3)$; $r = 2$

8. center $(-5, 4)$; $r = \frac{1}{2}$

10. center $(-1, 6)$; $r = \sqrt{5}$

Write the standard equation of each circle.



Find the center and radius of each circle. Then graph the circle.

17. $x^2 + y^2 = 25$

19. $(x + 2)^2 + (y + 4)^2 = 16$

Write the standard equation of the circle with the given center that passes through the given point.

21. center $(0, 0)$; point $(3, 4)$

22. center $(5, 9)$; point $(2, 9)$

12-5 Practice (continued) Form G

Circles in the Coordinate Plane

Write an equation of a circle with diameter \overline{AB} .

27. $A(0, 0), B(-6, 8)$

29. $A(7, 5), B(-1, -1)$

30. Reasoning Circles in the coordinate plane that have the same center and congruent radii are identical. Circles with congruent radii are congruent. In (a) through (g), circles lie in the coordinate plane.

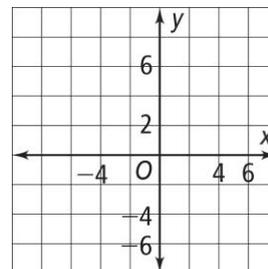
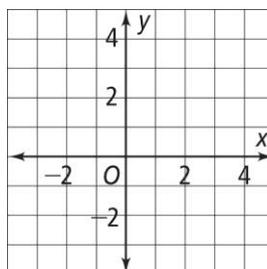
- a. Two circles have equal areas. Are the circles congruent?
- b. Two circles have circumferences that are equal in length. Are the circles congruent?
- c. How many circles have an area of $36\pi \text{ m}^2$?
- d. How many circles have a center of $(4, 7)$?
- e. How many circles have an area of $36\pi \text{ m}^2$ and center $(4, 7)$?
- f. How many circles have a circumference of $6\pi \text{ in.}$ and center $(4, 7)$?
- g. How many circles have a diameter with endpoints $A(0, 0)$ and $B(-6, 8)$?

Sketch the graph of each equation. Find all points of intersection of each pair of graphs.

31. $x^2 + y^2 = 65$
 $y = x - 3$

32. $x^2 + y^2 = 10$
 $y = 3$

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



35. Find the circumference and area of the circle whose equation is $(x - 5)^2 + (y + 4)^2 = 49$. Leave your answer in terms of π .

36. What are the x - and y -intercepts of the line tangent to the circle $(x + 6)^2 + (y - 2)^2 = 100$ at the point $(2, -4)$?