

9.7 Equations of Circles**Write the equation for the circle given the following.**

1. center (0, 0) radius 3

2. center (0, 0) radius 2

3. center (6, -8) diameter 10

4. center (0, 0) radius 4

5. center (1, 0) radius 3

6. center (3, 0) radius 2

9. center at (0, 0) that contains the point (2, 5)

11. a circle whose diameter has endpoints (-3, 0) and (3, 0)

10. center at (0, 0) that contains the point (-3, 5)

12. a circle whose diameter has endpoints (4, 6) and (-2, 6)

Given the standard form of a circle determine the center and the radius of each circle.

13. $x^2 + y^2 = 16$

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

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

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

17. $x^2 + (y-6)^2 = 64$

18. $(x+1)^2 + y^2 = 1$

19. $(x-5)^2 + (y+8)^2 = 81$

20. $(x+3)^2 + (y+6)^2 = 6$

21. $(x-1)^2 + (y+3)^2 = 16$

Complete the square to find the center and radius of a circle given the equation.

22. $x^2 + y^2 - 2x - 4y - 4 = 0$

23. $x^2 + y^2 + 4x + 2y - 20 = 0$

24. $x^2 + y^2 - 6x + 2y + 9 = 0$

25. $x^2 + y^2 - x + 2y + 1 = 0$

9.8 Proving Geometrical Theorems Algebraically

1. Prove that quad ABCD is a parallelogram given vertices A(-1, 3), B(2, 1), C(9, 2), and D(6,4)

3. Prove that ABCD is a rhombus given the vertices A(0, 3), B(3, 0), C(0, -3), and D(-3, 0)

2. Prove that quad ABCD is an isosceles trapezoid given the vertices A(-1, 1), B(-5, -3), C(-4, -10), and D(6,0)

4. Prove that the point (2, -5) lies on the circle with radius 2 and center (2, -3).

5. Given a circle with center at the origin determine whether or not the points $(1, \sqrt{3})$ and $(1, 2)$ lie on the same circle.