

Practice (Pg 141)

#1-18, 22-25, 27-29, 32-39

Write the equation for the circle centred at the origin with the given radius in standard form.

1. 9 2. 4 3. 5 4. 8
 5. 1.5 6. 6 7. $\sqrt{5}$ 8. $2\sqrt{2}$

Write the equation for the circle with each centre and radius in standard form.

9. centre (-2, 5), radius 3
 10. centre (-5, -1), radius 7
 11. centre (2, 8), radius 10
 12. centre (-3, 3), radius 12
 13. centre (-4, -5), radius 5
 14. centre (3, -4), radius 1.1
 15. centre (5, -4), radius $\sqrt{6}$
 16. centre (-6, 7), radius $3\sqrt{5}$

Find the centre and the radius of each circle.

17. $x^2 + y^2 = 121$ 18. $x^2 + y^2 = 144$
 19. $3x^2 + 3y^2 - 27 = 0$ 20. $25x^2 + 25y^2 - 100 = 0$
 21. $4x^2 + 4y^2 - 25 = 0$
 22. $(x - 5)^2 + (y - 9)^2 = 16$
 23. $(x + 3)^2 + (y - 1)^2 = 81$
 24. $(x + 7)^2 + (y + 2)^2 - 64 = 0$
 25. $(x - 6)^2 + (y + 4)^2 = 9.61$
 26. $4(x + 1)^2 + 4(y - 3)^2 = 9$

Determine the equation in standard form for each circle. Then, expand it to find the general form.

27. centre (8, 2), passing through (5, 0)
 28. centre (4, -6), passing through (-8, 1)
 29. centre (2, 3), passing through (7, 2)
 30. centre (-4, 5), tangent to the x-axis
 31. centre (-6, -5), tangent to the y-axis

Determine the equation in standard form for the circle with endpoints of a diameter at each pair of points.

32. (3, -6) and (3, 2) 33. (1, 4) and (-3, -6)
 34. (-3, 4) and (5, 2) 35. (3, 10) and (-7, -2)

Find the centre and the radius of each circle.

36. $x^2 - 6x + y^2 - 8y - 39 = 0$
 37. $x^2 - 7x + y^2 + 7y = 17.75$
 38. $x^2 + 8x + y^2 + 4y = 12$
 39. $x^2 + y^2 + 8 = 0$

Use a graphing calculator to graph each circle.

40. $x^2 + y^2 = 40$
 41. $5x^2 + 5y^2 - 100 = 0$

37. $\left(\frac{2}{7}, -\frac{2}{7}\right)$; $\frac{2}{13}$
 38. (-4, -2); $4\sqrt{2}$
 39. (0, 4); $2\sqrt{2}$
 35. $(x + 2)^2 + (y - 4)^2 = 61$ 36. (3, 4); 8
 33. $(x + 1)^2 + (y + 1)^2 = 29$ 34. $(x - 1)^2 + (y - 3)^2 = 17$
 32. $(x - 3)^2 + (y + 2)^2 = 16$
 31. $(x + 6)^2 + (y + 5)^2 = 36$; $x^2 + y^2 + 12x + 10y + 25 = 0$
 30. $(x + 4)^2 + (y - 5)^2 = 25$; $x^2 + y^2 + 8x - 10y + 16 = 0$
 29. $(x - 2)^2 + (y - 3)^2 = 26$; $x^2 + y^2 - 4x - 6y - 13 = 0$
 $x^2 + y^2 - 8x + 12y - 141 = 0$
 28. $(x - 4)^2 + (y + 6)^2 = 193$
 27. $(x - 8)^2 + (y - 2)^2 = 13$; $x^2 + y^2 - 16x - 4y + 55 = 0$
 25. (6, -4); 3.1 26. (-1, 3); $\frac{2}{3}$
 22. (5, 9); 4 23. (-3, 1); 9 24. (-7, -2); 8
 18. (0, 0); 12 19. (0, 0); 3 20. (0, 0); 2 21. (0, 0); $\frac{5}{2}$
 16. $(x + 6)^2 + (y - 7)^2 = 45$ 17. (0, 0); 11
 14. $(x - 3)^2 + (y + 4)^2 = 1.21$ 15. $(x - 5)^2 + (y + 4)^2 = 6$
 13. $(x + 4)^2 + (y + 5)^2 = 25$
 12. $(x + 3)^2 + (y - 3)^2 = 144$
 11. $(x - 2)^2 + (y - 8)^2 = 100$
 9. $(x + 2)^2 + (y - 5)^2 = 9$ 10. $(x + 5)^2 + (y + 1)^2 = 49$
 6. $x^2 + y^2 = 36$ 7. $x^2 + y^2 = 5$ 8. $x^2 + y^2 = 8$
 3. $x^2 + y^2 = 25$ 4. $x^2 + y^2 = 64$ 5. $x^2 + y^2 = 2.25$
 Practice 1. $x^2 + y^2 = 81$ 2. $x^2 + y^2 = 16$
 Section 3.3 pp. 141-142