

Practice 5-7

Example Exercises

Example 1

Solve each quadratic equation by completing the square.

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|----------------------|------------------------|-------------------------|
| 1. $x^2 + 8x = 9$ | 2. $x^2 - 2x = -6$ | 3. $x^2 + 4x - 21 = 0$ |
| 4. $x^2 = -10x + 3$ | 5. $x^2 + 12x = 0$ | 6. $x^2 - 14x + 58 = 0$ |
| 7. $x^2 = 2x + 48$ | 8. $x^2 + 6x + 5 = 0$ | 9. $x^2 + 3x - 3 = 0$ |
| 10. $x^2 = -x + 1$ | 11. $x^2 - 2x + 1 = 0$ | 12. $x^2 - 6x - 4 = 0$ |
| 13. $x^2 + 8x = -9$ | 14. $x^2 + 2x = 5$ | 15. $x^2 = -5x - 6$ |
| 16. $x^2 = 2x + 4$ | 17. $x^2 = x + 4$ | 18. $x^2 + x + 1 = 0$ |
| 19. $x^2 = -4x - 4$ | 20. $x^2 = -4x - 3$ | 21. $x^2 - 2x - 4 = 0$ |
| 22. $x^2 = -3x - 4$ | 23. $x^2 = -4x + 4$ | 24. $x^2 + 5x = 0$ |
| 25. $x^2 = -12x + 6$ | 26. $x^2 = 2x + 3$ | 27. $x^2 = -10x - 11$ |

Example 2

Solve each quadratic equation by completing the square.

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|-------------------------|--------------------------|-------------------------|
| 28. $3x^2 = -4x + 5$ | 29. $5x^2 - 2x - 5 = 0$ | 30. $3x^2 - 4x - 5 = 0$ |
| 31. $3x^2 + 4x + 5 = 0$ | 32. $3x^2 = -2x + 2$ | 33. $2x^2 = 3x + 4$ |
| 34. $4x^2 - 2x - 5 = 0$ | 35. $6x^2 - x - 5 = 0$ | 36. $2x^2 + 3x = 0$ |
| 37. $3x^2 = -2x + 5$ | 38. $3x^2 + x + 2 = 0$ | 39. $3x^2 = 2x - 4$ |
| 40. $3x^2 = x + 1$ | 41. $3x^2 + 3x + 4 = 0$ | 42. $3x^2 = -6x + 7$ |
| 43. $3x^2 = -x + 6$ | 44. $4x^2 + 10x - 3 = 0$ | 45. $6x^2 - 2x - 8 = 0$ |

Example 3

Rewrite each equation in vertex form. Give the coordinates of the vertex of the equation's graph.

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|-------------------------|--------------------------|--------------------------|
| 46. $y = x^2 + 4x + 6$ | 47. $y = -3x^2 - 6x + 6$ | 48. $y = 2x^2 + 8x - 8$ |
| 49. $y = x^2 - 4x + 9$ | 50. $y = 2x^2 + 4x + 5$ | 51. $y = x^2 + 3x + 1$ |
| 52. $y = 2x^2 - 3x + 2$ | 53. $y = -2x^2 - 5x - 3$ | 54. $y = -2x^2 + 8x - 8$ |