4.7 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 27, 45, and 65
- = **TAKS PRACTICE AND REASONING** Exs. 12, 34, 58, 59, 67, 69, and 70
- = **MULTIPLE REPRESENTATIONS** Ex. 66

SKILL PRACTICE

1. **VOCABULARY** What is the difference between a binomial and a trinomial?

2. **WRITING** *Describe* what completing the square means for an expression of the form $x^2 + bx$.

EXAMPLE 1 on p. 284 for Exs. 3–12

SOLVING BY SQUARE ROOTS **Solve the equation by finding square roots.**

3. $x^2 + 4x + 4 = 9$
4. $x^2 + 10x + 25 = 64$
5. $n^2 + 16n + 64 = 36$
6. $m^2 - 2m + 1 = 144$
7. $x^2 - 22x + 121 = 13$
8. $x^2 - 18x + 81 = 5$
9. $t^2 + 8t + 16 = 45$
10. $4u^2 + 4u + 1 = 75$
11. $9x^2 - 12x + 4 = -3$

12. **TAKS REASONING** What are the solutions of $x^2 - 4x + 4 = -1$?

(A) $2 \pm i$ (B) $-2 \pm i$ (C) $-3, -1$ (D) $1, 3$

EXAMPLE 2 on p. 285 for Exs. 13–21

FINDING *C* **Find the value of *c* that makes the expression a perfect square trinomial. Then write the expression as the square of a binomial.**

13. $x^2 + 6x + c$
14. $x^2 + 12x + c$
15. $x^2 - 24x + c$
16. $x^2 - 30x + c$
17. $x^2 - 2x + c$
18. $x^2 + 50x + c$
19. $x^2 + 7x + c$
20. $x^2 - 13x + c$
21. $x^2 - x + c$

EXAMPLES 3 and 4 on pp. 285–286 for Exs. 22–34

COMPLETING THE SQUARE **Solve the equation by completing the square.**

22. $x^2 + 4x = 10$
23. $x^2 + 8x = -1$
24. $x^2 + 6x - 3 = 0$
25. $x^2 + 12x + 18 = 0$
26. $x^2 - 18x + 86 = 0$
27. $x^2 - 2x + 25 = 0$
28. $2k^2 + 16k = -12$
29. $3x^2 + 42x = -24$
30. $4x^2 - 40x - 12 = 0$
31. $3s^2 + 6s + 9 = 0$
32. $7t^2 + 28t + 56 = 0$
33. $6r^2 + 6r + 12 = 0$

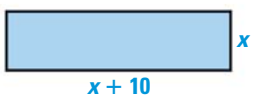
34. **TAKS REASONING** What are the solutions of $x^2 + 10x + 8 = -5$?

(A) $5 \pm 2\sqrt{3}$ (B) $5 \pm 4\sqrt{3}$ (C) $-5 \pm 2\sqrt{3}$ (D) $-5 \pm 4\sqrt{3}$

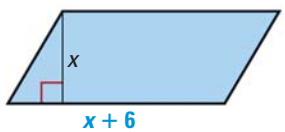
EXAMPLE 5 on p. 286 for Exs. 35–38

GEOMETRY **Find the value of *x*.**

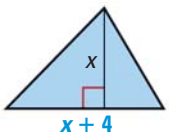
35. Area of rectangle = 50



36. Area of parallelogram = 48



37. Area of triangle = 40



38. Area of trapezoid = 20