9.7 EXERCISES

HOMEWORK KEY

= **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 11 and 49

= **TAKS PRACTICE AND REASONING** Exs. 23, 24, 49, 50, 53, and 54

SKILL PRACTICE

1. VOCABULARY Copy and complete: The polynomial $9n^2 + 6n + 1$ is called a(n) _?_ trinomial.

2. WRITING *Explain* how to factor the difference of two squares.

EXAMPLES 1 and 2 on p. 600 for Exs. 3–8

DIFFERENCE OF TWO SQUARES **Factor the polynomial.**

3. $x^2 - 25$ **4.** $n^2 - 64$ **5.** $81c^2 - 4$

6. $49 - 121p^2$ **7.** $-3m^2 + 48n^2$ **8.** $225x^2 - 144y^2$

EXAMPLES 3 and 4 on p. 601 for Exs. 9–14

PERFECT SQUARE TRINOMIALS **Factor the polynomial.**

9. $x^2 - 4x + 4$ **10.** $y^2 - 10y + 25$ **11.** $49a^2 + 14a + 1$

12. $9t^2 - 12t + 4$ **13.** $m^2 + m + \frac{1}{4}$ **14.** $2x^2 + 12xy + 18y^2$

EXAMPLES 1, 2, 3, and 4 on pp. 600–601 for Exs. 15–24

FACTORING POLYNOMIALS **Factor the polynomial.**

15. $4c^2 - 400$ **16.** $4f^2 - 36f + 81$ **17.** $-9r^2 + 4s^2$

18. $z^2 + 12z + 36$ **19.** $72 - 32y^2$ **20.** $45r^2 - 120rs + 80s^2$

ERROR ANALYSIS ***Describe*** **and correct the error in factoring.**

21.

$$36x^2 - 81 = 9(4x^2 - 9)$$
$$= 9((2x)^2 - 3^2)$$
$$= 9(2x - 3)^2$$

22.

$$y^2 - 6y + 9 = y^2 - 2(y \cdot 3) + 3^2$$
$$= (y - 3)(y + 3)$$

23. **TAKS REASONING** Which is the correct factorization of $-45x^2 + 20y^2$?

(A) $-5(3x + 2y)^2$ (B) $5(3x - 2y)^2$

(C) $-5(3x + 2y)(3x - 2y)$ (D) $5(3x + 2y)(3x - 2y)$

24. **TAKS REASONING** Which is the correct factorization of $16m^2 - 8mn + n^2$?

(A) $(4m - n)^2$ (B) $(4m + n)^2$

(C) $(8m - n)^2$ (D) $(4m - n)(4m + n)$

EXAMPLE 5 on p. 602 for Exs. 25–39

SOLVING EQUATIONS **Solve the equation.**

25. $x^2 + 8x + 16 = 0$ **26.** $16a^2 - 8a + 1 = 0$ **27.** $4w^2 - 36 = 0$

28. $32 - 18m^2 = 0$ **29.** $27c^2 + 108c + 108 = 0$ **30.** $-2h^2 - 28h - 98 = 0$

31. $6p^2 = 864$ **32.** $-3t^2 = -108$ **33.** $8k^2 = 98$

34. $-\frac{4}{3}x + \frac{4}{9} = -x^2$ **35.** $y^2 - \frac{5}{3}y = -\frac{25}{36}$ **36.** $\frac{2}{9} = 8n^2$

37. $-9c^2 = -16$ **38.** $-20s - 3 = 25s^2 + 1$ **39.** $y^4 - 2y^3 + y^2 = 0$