CHAPTER 8

Chapter Review

Know it! Note

8-1 Factors and Greatest Common Factors

Write the prime factorization of each number.

1. 66 **2.** 72 **3.** 325 **4.** 169

Find the GCF of each pair of monomials.

5. $30r^4$ and $12r^3$ **6.** $24z^3$ and $32z^2$

7. $16x^2y$ and $84xy^2$ **8.** $99s^4t^3$ and $45s^3t^6$

8-2 Factoring by GCF

Factor each polynomial. Check your answer.

9. $2s^2 - 4$ **10.** $-a^3 - 4a$ **11.** $36y^4 + 24y^2$

12. $4x^2 - 8x + 8$ **13.** $3b^3 - 15b^2 - 33b$ **14.** $14p^3 - 21p^2q$

Factor each polynomial by grouping. Check your answer.

15. $r^3 + 3r^2 + 2r + 6$ **16.** $7y^3 - 14y^2 - y + 2$ **17.** $5x^3 + 10x^2 + 3x + 6$

8-3 Factoring $x^2 + bx + c$

Factor each trinomial. Check your answer.

18. $a^2 - 5a - 14$ **19.** $x^2 + 7x + 10$ **20.** $n^2 + 4n - 12$

21. $f^2 - 11f + 18$ **22.** $z^2 - z - 20$ **23.** $t^2 - t - 30$

24. Factor $x^2 - 7x + 12$. Check your answer.

8-4 Factoring $ax^2 + bx + c$

Factor each trinomial. Check your answer.

25. $3a^2 + 5a + 2$ **26.** $6s^2 + 17s + 12$ **27.** $5y^2 - 18y + 8$

8-5 Factoring Special Products

Determine whether each trinomial is a perfect square. If so, factor it.

32. $9t^2 - 30t + 25$ **33.** $z^2 + 8z - 16$ **34.** $4y^2 + 36y + 81$

35. $4x^2 - 28x + 49$ **36.** $b^2 - 16b + 64$ **37.** $16m^2 + 12m + 9$

Determine whether each trinomial is the difference of two squares. If so, factor it.

38. $1 - 10s^4$ **39.** $t^2 - 9$ **40.** $121x^2 - 100$

8-6 Choosing a Factoring Method

Factor each polynomial completely. Check your answer.

44. $25b^3 + 30b^2 - 60b$ **45.** $2x^2y + 16xy + 30y$ **46.** $c^3 - 6c^2 + 4c + 24$