CHAPTER TEST 8-5 to 8-9 Review

Find the GCF of the given monomials.

1. 48, 64
2. $18a^2b$, $28a^3b^2$
3. $6x^2y^3$, $12x^2y^2z$, $15x^2y$

Factor each polynomial, if possible. If the polynomial cannot be factored using integers, write *prime*.

4. $25y^2 - 49w^2$
5. $t^2 - 16t + 64$
6. $x^2 + 14x + 24$
7. $28m^2 + 18m$
8. $a^2 - 11ab + 18b^2$
9. $12x^2 + 23x - 24$
10. $2h^2 - 3h - 18$
11. $6x^3 + 15x^2 - 9x$
12. $4my - 20m + 3py - 15p$
13. $x^3 - 4x^2 - 9x + 36$
14. $36a^2b^3 - 45ab^4$
15. $36m^2 + 60mn + 25n^2$
16. $\frac{1}{4}a^2 - \frac{4}{9}$
17. $64p^2 - 63p + 16$
18. $15a^2b + 5a^2 - 10a$
19. $6y^2 - 5y - 6$
20. $4s^2 - 100t^2$
21. $2d^2 + d - 1$
22. $3g^2 + g + 1$
23. $2xz + 2yz - x - y$

Solve each equation. Check your solutions.

24. $(4x - 3)(3x + 2) = 0$
25. $18s^2 + 72s = 0$
26. $4x^2 = 36$
27. $t^2 + 25 = 10t$
28. $a^2 - 9a - 52 = 0$
29. $x^3 - 5x^2 - 66x = 0$
30. $2x^2 = 9x + 5$
31. $3b^2 + 6 = 11b$

Solve.

32. **Geometry** A rectangle is 4 inches wide by 7 inches long. When the length and width are increased by the same amount, the area is creased by 26 square inches. What are the dimensions of the new rectangle?

33. **Construction** A rectangular lawn is 24 feet wide by 32 feet long. A sidewalk will be built along the inside edges of all four sides. The remaining lawn will have an area of 425 square feet. How wide will the walk be?

REVIEW EXERCISES

Factor each trinomial, if possible. If the trinomial cannot be factored using integers, write *prime*.

37. $y^2 + 7y + 12$
38. $x^2 - 9x - 36$
39. $6z^2 + 7z + 3$
40. $b^2 + 5b - 6$
41. $2r^2 - 3r - 20$
42. $3a^2 - 13a + 14$

Factor each polynomial, if possible. If the polynomial cannot be factored using integers, write *prime*.

43. $b^2 - 16$
44. $25 - 9y^2$
45. $16a^2 - 81b^4$
46. $2y^3 - 128y$
47. $9b^2 - 20$
48. $\frac{1}{4}n^2 - \frac{9}{16}r^2$

Factor each polynomial.

25. $13x + 26y$
26. $6x^2y + 12xy + 6$
27. $24a^2b^2 - 18ab$
28. $26ab + 18ac + 32a^2$
29. $36p^2q^2 - 12pq$
30. $a + a^2b + a^3b^3$

Factor each polynomial.

31. $a^2 - 4ac + ab - 4bc$
32. $4rs + 12ps + 2mr + 6mp$
33. $16k^3 - 4k^2p^2 - 28kp + 7p^3$
34. $dm + mr + 7r + 7d$
35. $24am - 9an + 40bm - 15bn$
36. $a^3 - a^2b + ab^2 - b^3$

Factor each polynomial, if possible. If the polynomial cannot be factored using integers, write *prime*.

49. $a^2 + 18a + 81$
50. $9k^2 - 12k + 4$
51. $4 - 28r + 49r^2$
52. $32n^2 - 80n + 50$
53. $6b^3 - 24b^2g + 24bg^2$
54. $49m^2 - 126m + 81$
55. $25r^2 - 120$

Solve each equation. Check your solution.

56. $y(y + 11) = 0$
57. $(3x - 2)(4x + 7) = 0$
58. $2a^2 - 9a = 0$
59. $n^2 = -17n$
60. $\frac{3}{4}y = \frac{1}{2}y^2$
61. $y^2 + 13y + 40 = 0$
62. $2m^2 + 13m = 24$
63. $25r^2 + 4 = -20r$