Name_____ Class_____ Date_____

4-4 Practice

Form G

Factoring Quadratic Expressions

Factor each expression.

1. $x^2 + 11x + 28$

2. $x^2 + 11x + 24$

3. $s^2 + 13s + 42$

4. $x^2 - 10x + 21$

5. $y^2 - 8y + 15$

6. $x^2 - 12x + 32$

7. $-x^2 + 9x - 18$

8. $-w^2 + 12w - 35$

9. $-t^2 - 3t + 54$

10. $x^2 - 7x - 60$

Find the GCF of each expression. Then factor the expression.

11. $6x^2 - 9$

12. $16m^2 + 8m$

13. $2a^2 + 22a + 60$

14. $5x^2 + 25x - 70$

15. $\frac{1}{3}x^2 + \frac{1}{3}x - 4$

16. $-7x^2 + 7x + 14$

Factor each expression.

17. $5x^2 - 17x + 6$

18. $3x^2 + 10x + 8$

19. $2b^2 - 9b - 5$

20. $z^2 + 12z + 36$

21. $9x^2 - 6x + 1$

22. $4k^2 + 12k + 9$

23. $n^2 - 49$

24. $2x^2 - 50$

25. The area of a rectangular field is $x^2 - x - 72$ m^2. The length of the field is $x + 8$ m. What is the width of the field in meters?

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4-4 Practice (continued) *Form G*

Factoring Quadratic Expressions

26. The product of two integers is $w^2 - 3w - 40$, where w is a whole number. Write expressions for each of the two integers in terms of w.

27. John is j years old. The product of his younger brother's and older sister's ages is $j^2 - 2j - 15$. How old are John's brother and sister in terms of John's age?

Factor each expression completely.

28. $2x^2 + 9x + 10$

29. $6y^2 - 5y + 1$

30. $3x^2 + 8x - 3$

31. $4x^2 - 7x - 15$

32. $12t^2 + 10t - 12$

33. $-10x^2 + x + 21$

34. $-4k^2 + 2k + 30$

35. $\frac{1}{2}x^2 + \frac{1}{2}x - 10$

36. $x^2 - 16x + 64$

37. $m^2 + 22m + 121$

38. $16x^2 - 40x + 25$

39. $36x^2 + 12x + 1$

40. $-2x^2 - 32x - 128$

41. $-25p^2 + 30p - 9$

42. $r^2 - 144$

43. $\frac{1}{4}x^2 - \frac{1}{4}$

44. $-7s^2 + 175$

45. $-\frac{1}{25}z^2 + 1$

46. The radius of the outer circle in the illustration is R. The radius of the inner circle is r.

a. Write an expression for the area of the outer circle.

b. Write an expression for the area of the inner circle.

c. Write an expression representing the area of the ring, the shaded region in the illustration. Do not simplify.

d. Factor the expression in part (c).