4-4 Practice

Form G

Factoring Quadratic Expressions

Factor each expression.

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

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

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

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

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

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

11. $6x^2 - 9$

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

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

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

Factor each expression.

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

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?

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. $2x^2 + 9x + 10$ **30.** $3x^2 + 8x - 3$

31. $4x^2 - 7x - 15$ **32.** $12t^2 + 10t - 12$

35. $\frac{1}{2}x^2 + \frac{1}{2}x - 10$ **36.** $x^2 - 16x + 64$

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

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

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

42. $r^2 - 144$

44. $-7s^2 + 175$

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