For each quadratic trinomial tell whether its factorization will have the form

$$(px + r)(qx + s),$$
$$(px + r)(qx - s),$$
$$\text{or } (px - r)(qx - s),$$

where p, q, r, and s represent positive integers.

3. $2x^2 + x - 6$ **4.** $5x^2 - 13x + 6$ **5.** $4x^2 + 8x + 3$

6. $4x^2 - 4x - 3$ **7.** $2x^2 - x - 10$ **8.** $6x^2 + 5x + 1$

9. $3x^2 + 4x - 4$ **10.** $5x^2 - 11x + 2$ **11.** $8x^2 - 25x + 3$

12. $9x^2 + 6x - 8$ **13.** $14x^2 + 13x + 3$ **14.** $10x^2 - 10x - 9$

Written Exercises

Factor. Check by multiplying the factors. If the polynomial is not factorable, write *prime*.

A

1. $3x^2 + 7x + 2$ **2.** $2x^2 + 5x + 3$

3. $3c^2 - 8c + 5$ **4.** $2x^2 - 15x + 7$

5. $5y^2 + 4y - 1$ **6.** $3a^2 + 4a - 4$

7. $5u^2 - 6u - 2$ **8.** $3r^2 - 2r - 5$

9. $7x^2 + 8x + 1$ **10.** $2p^2 + 7p + 3$

11. $5x^2 - 17x + 6$ **12.** $7m^2 - 9m + 2$

13. $3p^2 + 7p - 6$ **14.** $4c^2 + 4c - 3$

15. $4y^2 - y - 3$ **16.** $6a^2 - 5a - 2$

17. $5 + 7x - 6x^2$ **18.** $9 + 6k - 8k^2$

19. $1 - 5b - 8b^2$ **20.** $7 - 12s - 4s^2$

21. $3m^2 + 11mn + 6n^2$ **22.** $2p^2 - 7pq + 6q^2$

23. $2x^2 + xy - 3y^2$ **24.** $5a^2 - 2ab - 7b^2$

B

25. $9m^2 - 25mn - 6n^2$ **26.** $6h^2 + 17hk + 10k^2$

27. $6r^2 - 11rp + 5p^2$ **28.** $4x^2 + 16xy - 9y^2$

29. $21c^2 + 4c - 12$ **30.** $18z^2 + 19z - 12$

31. $6 + 7a - 20a^2$ **32.** $8 + 45r - 18r^2$

33. $32n^2 - 4n - 15$ **34.** $33u^2 - u - 14$

35. $21c^2 + 22c - 24$ **36.** $35y^2 + 2y - 24$

C

37. $2(a + 2)^2 + 5(a + 2) - 3$ **38.** $2(x - 1)^2 - 9(x - 1) - 5$

39. $2(a + 2b)^2 + 5(a + 2b)c - 3c^2$ **40.** $2(x - y)^2 - 9(x - y)z - 5z^2$

41. $4x^4 - 17x^2 + 4$ **42.** $2x^4 - 15x^2 - 27$

43. $(y^2 + 3y - 1)^2 - 9$ **44.** $(a^2 - 4a - 1)^2 - 16$