Practice 9-3

Multiplying Binomials

Find each product. Write in standard form.

1. $(x + 3)(2x - 5)$ **2.** $(x^2 + x - 1)(x + 1)$ **3.** $(3w + 4)(2w - 1)$

4. $(x + 5)(x + 4)$ **5.** $(2b - 1)(b^2 - 3b + 4)$ **6.** $(a - 11)(a + 5)$

7. $(2g - 3)(2g^2 + g - 4)$ **8.** $(3s - 4)(s - 5)$ **9.** $(4x + 3)(x - 7)$

10. $(x + 6)(x^2 - 4x + 3)$ **11.** $(5x - 3)(4x + 2)$ **12.** $(3y + 7)(4y + 5)$

13. $(3x + 7)(x + 5)$ **14.** $(5x - 2)(x + 3)$ **15.** $(3m^2 - 7m + 8)(m - 2)$

16. $(a - 6)(a + 8)$ **17.** $(x + 2)(2x^2 - 3x + 2)$ **18.** $(a^2 + a + 1)(a - 1)$

19. $(x - 2)(x^2 + 4x + 4)$ **20.** $(2r + 1)(3r - 1)$ **21.** $(k + 4)(3k - 4)$

22. $(2n - 3)(n^2 - 2n + 5)$ **23.** $(p - 4)(2p + 3)$ **24.** $(3x + 1)(4x^2 - 2x + 1)$

25. $(2x^2 - 5x + 2)(4x - 3)$ **26.** $(x + 7)(x + 5)$ **27.** $(6x - 11)(x + 2)$

28. $(2x + 1)(4x + 3)$ **29.** $(3x + 4)(3x - 4)$ **30.** $(6x - 5)(3x + 1)$

31. $(n - 7)(n + 4)$ **32.** $(3x - 1)(2x + 1)$ **33.** $(d + 9)(d - 11)$

34. $(2x^2 + 5x - 3)(2x + 1)$ **35.** $(b + 8)(2b - 5)$ **36.** $(2x - 5)(x + 4)$

37. $(3x + 5)(5x - 7)$ **38.** $(x - 5)(2x^2 - 7x - 2)$ **39.** $(2x^2 - 9x + 11)(2x + 1)$

40. $(2x^2 + 5x - 4)(2x + 7)$ **41.** $(x^2 + 6x + 11)(3x + 5)$ **42.** $(5x + 7)(7x + 3)$

43. $(4x - 7)(2x - 5)$ **44.** $(x - 9)(3x + 5)$ **45.** $(2x - 1)(x^2 - 7x + 1)$

46. The width of a rectangular painting is 3 in. more than twice the height. A frame that is 2.5 in. wide goes around the painting.

   a. Write an expression for the combined area of the painting and frame.

   b. Use the expression to find the combined area when the height of the painting is 12 in.

   c. Use the expression to find the combined area when the height of the painting is 15 in.

47. The Robertsons put a rectangular pool with a stone walkway around it in their backyard. The total length of the pool and walkway is 3 times the total width. The walkway is 2 ft wide all around.

   a. Write an expression for the area of the pool.

   b. Find the area of the pool when the total width is 10 ft.

   c. Find the area of the pool when the total width is 9 ft.

48. The Cutting Edge frame shop makes a mat by cutting out the inside of a rectangular board. Use the diagram to find the length and width of the original board if the area of the mat is 184 in^2.