

Practice 9-3**Multiplying Binomials****Simplify 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 .

