3.7 Part1 Multiplying Polynomials

Practice

Expand.

1. $2x(3x-4)$ **2.** $3a(4a-3b)$

3. $-4t(5s-t)$ **4.** $-x(2x^2-7x)$

5. $2y^2(3y-1)$ **6.** $-3m^2(m^2-6m)$

7. $(3x-1)2$ **8.** $(4a+3)(5a)$

9. $(1-6y)(-3)$ **10.** $(x^2-3x)(-4x)$

Expand and simplify.

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

13. $4(2x-7)-5(4x+9)$ **14.** $5(3t-7)-(4t+1)$

15. $4x+3(2x-5)+6(1-5x)$

16. $8(1-3y)-4+2(8y-7)$

Expand.

17. $6(3a-4b-9)$ **18.** $-4(3t^2-t-1)$

19. $-(4m^2-m-7)$ **20.** $7(9y^2-3y-7)$

21. $-5(2x^2+3xy-y^2)$ **22.** $4y(2y^2+3y-1)$

23. $-6x^2(3x^2-6x-9)$ **24.** $2ab^2(4a^2b-ab+3ab^2)$

25. $abc(3a+4b-2c)$

Expand and simplify.

26. $3x(x-4)-x(x+5)-2x(x-1)$

27. $4a(a+3b)+2b(2a-b)-6(a-b)$

28. $2x(x^2-3x-4)-3x(4x^2-x+5)$

29. $3y(y^2-y-1)-2y(3y^2-6)$

30. $3s(2s^2+st-t^2)-t(4s^2-st+3t^2)$

31. a) Explain how the diagram illustrates the product $(x+4)(x+5)$.
b) State the product in simplified form.
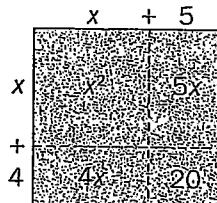
Find each product.

32. $(t+5)(t+4)$ **33.** $(m+4)(m+1)$

34. $(x-3)(x-4)$ **35.** $(w-7)(w-8)$

36. $(x-4)(x-4)$ **37.** $(y-9)(y+7)$

38. $(s+1)(s-4)$ **39.** $(a-4)(a-9)$

40. $(4+x)(7-x)$ **41.** $(2-y)(3-y)$

42. $(x+7)(x+7)$ **43.** $(b-8)(b+8)$

44. a) Explain how the diagram illustrates the product $(2x+y)(3x+2y)$.
b) State the product in simplified form.
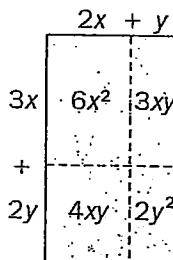
Expand and simplify.

45. $(x+3)(3x+1)$ **46.** $(3a+5)(a+4)$

47. $(y-3)(4y+5)$ **48.** $(5m-2)(m-4)$

49. $(3x-4)(3x-4)$ **50.** $(1-6t)(4+5t)$

51. $(3a-5)(3a+5)$ **52.** $(3x+y)(x+4y)$

53. $(4a-b)(2a-5b)$ **54.** $(5m+2n)(4m-3n)$

55. $(4s-3t)(5s-6t)$ **56.** $(7a+8b)(a-b)$

57. $(2x^2-xy)(x^2-3xy)$ **58.** $(-3a+4b)(2a+3b)$

Expand and simplify.

59. $(x+6)(x+4)+(x+2)(x+3)$

60. $(y-3)(y-1)-(y+2)(y-6)$

61. $(2x-3)(x+5)+(3x+4)(4x+1)$

62. $3(b-7)(b-6)$

63. $2(m+3)(m+5)+4(2m+3)$

64. $3(x-4)(x+3)-2(4x-1)$

65. $5(3t-4)(2t-1)-(6t-5)$

66. $2(3x+2)(3x+2)-3(2x-1)(2x-1)$

67. $12-2(3y-2)(3y+2)-(2y+5)(2y+5)$

68. $(3x-4)^2$

69. $(5a+2)^2-2a+7$

70. $x-3(x+2)^2$

Answers

1. $6x^2 - 8x$ **2.** $12a^2 - 9ab$ **3.** $-20st + 4t^2$

4. $-2x^3 + 7x^2$ **5.** $6y^3 - 2y^2$ **6.** $-3m^4 + 18m^3$ **7.** $6x - 2$

8. $20a^2 + 15a$ **9.** $-3 + 18y$ **10.** $-4x^3 + 12x^2$ **11.** $7x + 7$

12. $-3m + 33$ **13.** $-12x - 73$ **14.** $11t - 36$ **15.** $-20x - 9$

16. $-10 - 8y$ **17.** $18a - 24b - 54$ **18.** $-12t^2 + 4t + 4$

19. $-4m^2 + m + 7$ **20.** $63y^2 - 21y - 49$

21. $-10x^2 - 15xy + 5y^2$ **22.** $8y^3 + 12y^2 - 4y$

23. $-18x^4 + 36x^3 + 54x^2$ **24.** $8a^3b^3 - 2a^2b^3 + 6a^2b^4$

25. $3a^2bc + 4ab^2c - 2abc^2$ **26.** $-15x$

27. $4a^2 + 16ab - 2b^2 - 6a + 6b$ **28.** $-10x^3 - 3x^2 - 23x$

29. $-3y^3 - 3y^2 + 9y$ **30.** $6s^3 - s^2t - 2st^2 - 3t^3$

31. b) $x^2 + 9x + 20$ **32.** $t^2 + 9t + 20$ **33.** $m^2 + 5m + 4$

34. $x^2 - 7x + 12$ **35.** $w^2 - 15w + 56$ **36.** $x^2 - 8x + 16$

37. $y^2 - 2y - 63$ **38.** $s^2 - 3s - 4$ **39.** $a^2 - 13a + 36$

40. $28 + 3x - x^2$ **41.** $6 - 5y + y^2$ **42.** $x^2 + 14x + 49$

43. $b^2 - 64$ **44.** b) $6x^2 + 7xy + 2y^2$ **45.** $3x^2 + 10x + 3$

46. $3a^2 + 17a + 20$ **47.** $4y^2 - 7y - 15$ **48.** $5m^2 - 22m + 8$

49. $9x^2 - 24x + 16$ **50.** $4 - 19t - 30t^2$ **51.** $9a^2 - 25$

52. $3x^2 + 13xy + 4y^2$ **53.** $8a^2 - 22ab + 5b^2$

54. $20m^2 - 7mn - 6n^2$ **55.** $20s^2 - 39st + 18t^2$

56. $7a^2 + ab - 8b^2$ **57.** $2x^4 - 7x^3y + 3x^2y^2$

58. $-6a^2 - ab + 12b^2$ **59.** $2x^2 + 15x + 30$ **60.** 15

61. $14x^2 + 26x - 11$ **62.** $3b^2 - 39b + 126$

63. $2m^2 + 24m + 42$ **64.** $3x^2 - 11x - 34$

65. $30t^2 - 61t + 25$ **66.** $6x^2 + 36x + 5$

67. $-22y^2 - 20y - 5$

68. $9x^2 - 24x + 16$

69. $25a^2 + 18a + 11$

70. $-3x^2 - 11x - 12$