

Exercise 2.3

Practice

Expand.

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|-----------------|---------------------|
| 1. $2x(3x-4)$ | 2. $3a(4a-3b)$ |
| 3. $-4t(5t-1)$ | 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.

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

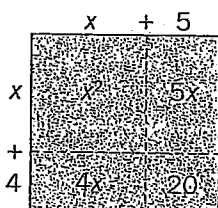
Expand.

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| 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.

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

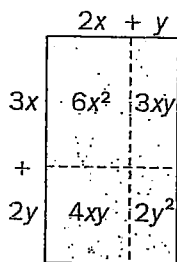
31. a) Explain how the diagram illustrates the product $(x+4)(x+5)$.
 b) State the product in simplified form.



Find each product.

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|------------------|------------------|
| 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.

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|--------------------------|-----------------------|
| 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.

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|-------------------------------------|---------------------|
| 59. $(x+6)(x+4)+(x+2)(x+3)$ | 68. $(3x-4)^2$ |
| 60. $(y-3)(y-1)-(y+2)(y-6)$ | 69. $(5a+2)^2-2a+7$ |
| 61. $(2x-3)(x+5)+(3x+4)(4x+1)$ | 70. $x-3(x+2)^2$ |
| 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. $12-2(3y-2)(3y+2)-(2y+5)(2y+5)$ | |

Solutions :

- Practice 1. $6x^2 - 8x$ 2. $12a^2 - 9ab$ 3. $-20st + 4t^2$
 4. $-2x^3 + 7x^2$ 5. $6y^3 - 2y^2$ 6. $-3m^3 + 18m^2$ 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. a) $x^2 + 9x + 20$ 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. $20m^2 - 7mm - 6m^2$ 55. $20s^2 - 39st + 18t^2$
 56. $7a^2 + ab - 8b^2$ 57. $2x^3 - 7x^2y + 3x^2y^2$
 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. $-3x^2 - 11x - 12$