R4 Exercises (pages 38–40)

1. $12(m+5)$ **3.** $8k(k^2+3)$ **5.** $xy(1-5y)$
7. $-2p^2q^4(2p+q)$ **9.** $4k^2m^3(1+2k^2-3m)$
11. $2(a+b)(1+2m)$ **13.** $(r+3)(3r-5)$
15. $(m-1)(2m^2-7m+7)$ **17.** The *completely* factored form is $4xy^3(xy^2-2)$. **19.** $(2s+3)(3t-5)$
21. $(m^4+3)(2-a)$ **23.** $(p^2-2)(q^2+5)$
25. $(2a-1)(3a-4)$ **27.** $(3m+2)(m+4)$ **29.** prime
31. $2a(3a+7)(2a-3)$ **33.** $(3k-2p)(2k+3p)$
35. $(5a+3b)(a-2b)$ **37.** $(4x+y)(3x-y)$
39. $2a^2(4a-b)(3a+2b)$ **41.** $(3m-2)^2$
43. $2(4a+3b)^2$ **45.** $(2xy+7)^2$ **47.** $(a-3b-3)^2$
49. **(a)** B **(b)** C **(c)** A **(d)** D **51.** $(3a+4)(3a-4)$
53. $(x^2+4)(x+2)(x-2)$ **55.** $(5s^2+3t)(5s^2-3t)$
57. $(a+b+4)(a+b-4)$ **59.** $(p^2+25)(p+5)(p-5)$
61. $(2-a)(4+2a+a^2)$ **63.** $(5x-3)(25x^2+15x+9)$
65. $(3y^3+5z^2)(9y^6-15y^3z^2+25z^4)$
67. $r(r^2+18r+108)$
69. $(3-m-2n)(9+3m+6n+m^2+4mn+4n^2)$
71. B **73.** $(x-1)(x^2+x+1)(x+1)(x^2-x+1)$
74. $(x-1)(x+1)(x^4+x^2+1)$
75. $(x^2-x+1)(x^2+x+1)$ **76.** additive inverse property (0 in the form x^2-x^2 was added on the right.); associative property of addition; factoring a perfect square trinomial; factoring a difference of squares; commutative property of addition **77.** They are the same.
78. $(x^4-x^2+1)(x^2+x+1)(x^2-x+1)$
79. $9(7k-3)(k+1)$ **81.** $(3a-7)^2$
83. $(m^2-5)(m^2+2)$ **85.** $(2b+c+4)(2b+c-4)$
87. $(x+y)(x-5)$ **89.** $(m-2n)(p^4+q)$
91. $(2z+7)^2$ **93.** $(10x+7y)(100x^2-70xy+49y^2)$
95. $(5m^2-6)(25m^4+30m^2+36)$
97. $9(x+2)(3x^2+4)$ **99.** $2y(3x^2+y^2)$ **101.** prime
103. $4xy$ **107.** $\left(7x+\frac{1}{5}\right)\left(7x-\frac{1}{5}\right)$
109. $\left(\frac{5}{3}x^2+3y\right)\left(\frac{5}{3}x^2-3y\right)$ **111.** ± 36 **113.** 9