Answers to Unit 2

SECTION 1 Pages 57–58

Example 2 -4

Example 4
$2xy + y^2$
$2(-4)(2) + (2)^2$
$2(-4)(2) + 4$
$-8(2) + 4$
$-16 + 4$
-12

Example 6
$\frac{a^2 + b^2}{a + b}$
$\frac{(5)^2 + (-3)^2}{5 + (-3)}$
$\frac{25 + 9}{5 + (-3)}$
$\frac{34}{2} = 17$

Example 8
$x^3 - 2(x + y) + z^2$
$(2)^3 - 2[2 + (-4)] + (-3)^2$
$(2)^3 - 2(-2) + (-3)^2$
$8 - 2(-2) + 9$
$8 + 4 + 9$
$12 + 9$
21

Pages 59–60

1. $2x^2$, $5x$, -8 **3.** 6, $-a^4$ **5.** $7x^2y$, $6xy^2$ **7.** 1, -9 **9.** 1, -4, -1 **11.** 10 **13.** 32 **15.** 21 **17.** 16 **19.** -9 **21.** 3 **23.** -7 **25.** 13 **27.** -15 **29.** 41 **31.** 1 **33.** 5 **35.** 1 **37.** 57 **39.** 5 **41.** 12 **43.** 6 **45.** 10 **47.** 8 **49.** -3 **51.** -2 **53.** -22 **55.** 4 **57.** 20 **59.** 24 **61.** 4.96 **63.** -5.68

SECTION 2 Pages 61–66

Example 2
$3a - 2b - 5a + 6b$
$-2a + 4b$

Example 4
$-3y^2 + 7 + 8y^2 - 14$
$5y^2 - 7$

Example 6
$-5(4y^2)$
$-20y^2$

Example 8
$-7(-2a)$
$14a$

Example 10
$(-5x)(-2)$
$10x$

Example 12
$5(3 + 7b)$
$15 + 35b$

Example 14
$(3a - 1)5$
$15a - 5$

Example 16
$-8(-2a + 7b)$
$16a - 56b$

Example 18
$-(5x - 12)$
$-5x + 12$

Example 20
$3(-a^2 - 6a + 7)$
$-3a^2 - 18a + 21$

Example 22
$3y - 2(y - 7x)$
$3y - 2y + 14x$
$y + 14x$

Example 24
$-2(x - 2y) + 4(x - 3y)$
$-2x + 4y + 4x - 12y$
$2x - 8y$

Example 26
$-5(-2y - 3x) + 4y$
$10y + 15x + 4y$
$14y + 15x$

Example 28
$3y - 2[x - 4(2 - 3y)]$
$3y - 2[x - 8 + 12y]$
$3y - 2x + 16 - 24y$
$-21y - 2x + 16$

Pages 67–70

1. $14x$ **3.** $5a$ **5.** $-6y$ **7.** $-3b - 7$ **9.** $5a$ **11.** $-2ab$ **13.** $5xy$ **15.** 0 **17.** $-\frac{5}{6}x$ **19.** $-\frac{1}{24}x^2$
21. $11x$ **23.** $7a$ **25.** $-14x^2$ **27.** $-x + 3y$ **29.** $17x - 3y$ **31.** $-2a - 6b$ **33.** $-3x - 8y$
35. $-4x^2 - 2x$ **37.** $12x$ **39.** $-21a$ **41.** $6y$ **43.** $8x$ **45.** $-6a$ **47.** $12b$ **49.** $-15x^2$ **51.** x^2
53. a **55.** x **57.** n **59.** x **61.** y **63.** $3x$ **65.** $-2x$ **67.** $-8a^2$ **69.** $8y$ **71.** $4y$ **73.** $-2x$
75. $6a$ **77.** $-x - 7$ **79.** $10x - 35$ **81.** $-5a - 80$ **83.** $-15y + 35$ **85.** $20 - 14b$ **87.** $-35 + 50x$
89. $18x^2 + 12x$ **91.** $10x - 35$ **93.** $-14x + 49$ **95.** $-30x^2 - 15$ **97.** $-24y^2 + 96$ **99.** $5x^2 + 5y^2$
101. $-4x^2 + 20y^2$ **103.** $3x^2 + 6x - 18$ **105.** $-2y^2 + 4y - 8$ **107.** $-2a^2 - 4a + 6$
109. $10x^2 + 15x - 35$ **111.** $6x^2 + 3xy - 9y^2$ **113.** $-3a^2 - 5a + 4$ **115.** $-2x - 16$ **117.** $-9 - 12y$
119. $7n - 7$ **121.** $-2x + 41$ **123.** $3y - 3$ **125.** $-a - 7b$ **127.** $-4x + 24$ **129.** $-2x - 16$
131. $-3x + 21$ **133.** $-7x + 24$ **135.** $-x + 50$ **137.** $20x - 41y$

SECTION 3 Pages 71–74

Example 2
the difference between twice n and one third of n

$2n - \frac{1}{3}n$

Example 4
the quotient of 7 less than b and 15

$\frac{b-7}{15}$

Example 6
the unknown number: n
the cube of the number: n^3
the total of ten and the cube of the number: $10 + n^3$

$n(10 + n^3)$

Example 8
the first integer: x
the second integer: $x + 1$
the third integer: $x + 2$

$x + (x + 1) + (x + 2)$

Example 10
the unknown number: x
the difference between the number and sixty: $x - 60$

$5(x - 60)$

Example 12
the unknown number: x
three eighths of the number: $\frac{3}{8}x$
five sixths of the number: $\frac{5}{6}x$

$\frac{3}{8}x - \frac{5}{6}x$
$\frac{9}{24}x - \frac{20}{24}x$
$-\frac{11}{24}x$

Example 14
the first consecutive integer: x
the second consecutive integer: $x + 1$
the third consecutive integer: $x + 2$

$x + (x + 1) + (x + 2)$
$3x + 3$

Pages 75–78

1. $8 + y$ **3.** $t + 10$ **5.** $z + 14$ **7.** $x^2 - 20$ **9.** $\frac{3}{4}n + 12$ **11.** $8 + \frac{n}{4}$ **13.** $3(y + 7)$ **15.** $t(t + 16)$
17. $\frac{1}{2}x^2 + 15$ **19.** $5n^3 + n^2$ **21.** $r - \frac{r}{3}$ **23.** $x^2 - (x + 17)$ **25.** $9(z + 4)$ **27.** $12 - x$ **29.** $\frac{2}{3}x$ **31.** $\frac{2x}{9}$
33. $11x - 8$ **35.** $(x + 2) - 9$ **37.** $\frac{7}{5 + x}$ **39.** $5 + \frac{1}{2}(x + 3)$ **41.** $x(2x - 4)$ **43.** $(x - 5)x$ **45.** $\frac{2x + 5}{x}$
47. $x - (3x - 8)$ **49.** $x + 3x$; $4x$ **51.** $(x + 6) + 5$; $x + 11$ **53.** $x - (x + 10)$; -10 **55.** $\frac{1}{6}x + \frac{4}{9}x$; $\frac{11}{18}x$
57. $\frac{x}{3} + x$; $\frac{4x}{3}$ **59.** $14\left(\frac{1}{7}x\right)$; $2x$ **61.** $10x - 2x$; $8x$ **63.** $(x - 6) + 16$; $x + 10$ **65.** $4x - x$; $3x$ **67.** $15x - 5x$;
$10x$ **69.** $(9 - x) - 12$; $-3 - x$ **71.** $10 - \left(\frac{2}{3}x + 4\right)$; $6 - \frac{2}{3}x$ **73.** $5[x + (x + 1)]$; $10x + 5$
75. $x + (x + 1) + 6$; $2x + 7$ **77.** $2[x + (x + 1) + (x + 2)]$; $6x + 6$ **79.** $x^2 + 3 + 2x^2$; $3x^2 + 3$
81. $(x + 7) + (2 - 2x)$; $-x + 9$ **83.** $(6 + x) + 2(x - 3)$; $3x$ **85.** $x + 4(x - 9)$; $5x - 36$

REVIEW/TESTS
Pages 79–80

1.1a 22 **1.1b** 3 **2.1a** $5x$ **2.1b** y^2 **2.1c** $-9x - 7y$ **2.1d** $-2x - 5y$ **2.2a** $2x$ **2.2b** $3x$ **2.2c** $36y$ **2.2d** $-10a$ **2.3a** $15 - 35b$ **2.3b** $-4x + 8$ **2.3c** $-6x^2 + 21y^2$ **2.3d** $-10x^2 + 15x - 30$ **2.4a** $-x + 6$ **2.4b** $7x + 38$ **2.4c** $-7x + 33$ **2.4d** $2x + y$ **3.1a** $b - 7b$ **3.1b** $10(x - 3)$ **3.2a** $x + 2x^2$ **3.2b** $\frac{6}{x} - 3$ **3.3a** $8[x + (x + 1)]$; $16x + 8$ **3.3b** $11 + 2(x + 4)$; $19 + 2x$

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1.1a b **1.1b** a **2.1a** d **2.1b** a **2.1c** c **2.1d** b **2.2a** d **2.2b** d **2.2c** a **2.2d** b **2.3a** c **2.3b** d **2.3c** b **2.3d** a **2.4a** c **2.4b** d **2.4c** a **2.4d** a **3.1a** d **3.1b** a **3.2a** c **3.2b** b **3.3a** b **3.3b** d