

# Answers to Selected Exercises

## To The Student

In this section we provide the answers that we think most students will obtain when they work the exercises using the methods explained in the text. If your answer does not look exactly like the one given here, it is not necessarily wrong. In many cases there are equivalent forms of the answer. For example, if the answer section shows  $\frac{3}{4}$  and your answer is .75, you have obtained the correct answer but written it in a different (yet equivalent) form. Unless the directions specify otherwise, .75 is just as valid an answer as  $\frac{3}{4}$ . In general, if your answer does not agree with the one given in the text, see whether it can be transformed into the other form. If it can, then it is the correct answer. If you still have doubts, talk with your instructor.

If you need further help with algebra, you may want to obtain a copy of the *Student's Solution Manual* that goes with this book. Your college bookstore either has this manual or can order it for you.

## CHAPTER R REVIEW OF BASIC CONCEPTS

### R.1 Exercises (page 11)

1. B, C, D, F    3. D, F    5. E, F    9. Answers will vary. Three examples are  $\frac{2}{3}$ ,  $-\frac{4}{9}$ , and  $\frac{21}{2}$ .    11. 1, 3
13.  $-6, -\frac{12}{4}$  (or  $-3$ ), 0, 1, 3    15.  $-81$     17. 81    19.  $-243$     21.  $-162$     25.  $-148$     27. 23    29. 18
31.  $-12$     33.  $-\frac{25}{36}$     35.  $-\frac{6}{7}$     37. 36    39. 36    41.  $-\frac{1}{2}$     43.  $-\frac{23}{20}$     45.  $-\frac{13}{3}$     47. 92.9    49. 86.0
51. .031    53. .024; .023; Increased weight results in lower BACs.    55. distributive    57. inverse    59. identity
63.  $(8 - 14)p = -6p$     65.  $-3z + 3y$     67.  $20z$     69.  $m + 8$     71.  $\frac{2}{3}y + \frac{4}{9}z - \frac{5}{3}$     73. 65.25
75. approximately 67,000 mph    77. 930    79. 990    81. 31 ft    85. 1700    87. 150

### R.2 Exercises (page 22)

1.  $-5, -4, -2, -\sqrt{3}, \sqrt{6}, \sqrt{8}, 3$     3.  $\frac{3}{4}, \frac{7}{5}, \sqrt{2}, \frac{22}{15}, \frac{8}{5}$     5.  $-|9|, -|-6|, |-8|$     9. false;  $|5 - 7| = |7| - |5|$
11. true    13. false;  $|a - b| \neq |b| - |a|$     15. 9    17.  $-\frac{4}{5}$     19. 8    21. 6    23. 4    25.  $-1$     27.  $-5$
29.  $\pi - 3$     31.  $3 - y$     33.  $8 - 2k$     35.  $y - x$     37.  $3 + x^2$     39. property 2    41. property 3
43. property 5    45. property 1    47. 17,648 yd; No, it is not the same, because the sum of the absolute values is 17,660.
49. 9    51.  $47^\circ\text{F}$     53.  $22^\circ\text{F}$     55. 3    57. 9    59. 13    61.  $x$  and  $y$  have the same sign.    63.  $x$  and  $y$  have different signs.    65.  $x$  and  $y$  have the same sign.

### R.3 Exercises (page 32)

1. incorrect;  $(mn)^2 = m^2n^2$     3. incorrect;  $\left(\frac{k}{5}\right)^3 = \frac{k^3}{5^3}$     5.  $9^8$     7.  $-16x^7$     9.  $2^{10}$     11.  $-4^2m^6$  or  $-16m^6$     13.  $\frac{r^{24}}{s^6}$
15. (a) B (b) C (c) B (d) C    19. polynomial; degree 11; monomial    21. polynomial; degree 6; binomial
23. polynomial; degree 6; binomial    25. polynomial; degree 6; trinomial    27. not a polynomial    29.  $x^2 - x + 3$
31.  $12y^2 + 4$     33.  $6m^4 - 2m^3 - 7m^2 - 4m$     35.  $28r^2 + r - 2$     37.  $15x^4 - \frac{7}{3}x^3 - \frac{2}{9}x^2$
39.  $12x^5 + 8x^4 - 20x^3 + 4x^2$     41.  $-2z^3 + 7z^2 - 11z + 4$     43.  $m^2 + mn - 2n^2 - 2km + 5kn - 3k^2$     45.  $4m^2 - 9$
47.  $16x^4 - 25y^2$     49.  $16m^2 + 16mn + 4n^2$     51.  $25r^2 - 30rt^2 + 9t^4$     53.  $4p^2 - 12p + 9 + 4pq - 6q + q^2$
55.  $9q^2 + 30q + 25 - p^2$     57.  $9a^2 + 6ab + b^2 - 6a - 2b + 1$     59.  $y^3 + 6y^2 + 12y + 8$