Chapter 1 answers

1.1
1. <   3. >   5. <   7. >   9. >   11. >   13. 2   15. 10   17. 0
19. 56   21. -54   23. -21   25. -171   27. 1,030
29. 5   31. -13   33. -31   35. -35   37. 45   39. 100
41. 15   43. -94   45. -9   47. -21   49. -896   51. -1,052
53. -20   55. 64   57. -10   59. -8   61. 240   63. 1
65. -27   67. 13   69. -25   71. 24   73. 1   75. Undefined
77. 0   79. -542

1.2
1. 0.8   3. 0.75   5. 0.875   7. 1.6875   9. 2.85   11. $\frac{4}{5}$
13. $2\frac{2}{5}$ 15. $3\frac{3}{25}$ 17. $8\frac{13}{20}$ 19. $10\frac{87}{100}$ 21. 0.12   23. 0.015
25. 1.25   27. 0.0032   29. $\frac{1}{5}$ 31. $\frac{7}{20}$ 33. $\frac{1}{50}$ 35. $\frac{31}{25}$
37. 50%   39. 87.5%   41. 56.25%   43. 18%   45. 6.4%   47. 1200%
49. $-\frac{5}{24}$ 51. $\frac{7}{24}$ 53. $-\frac{11}{8}$ 55. $\frac{3}{8}$ 57. $-\frac{47}{48}$ 59. $\frac{13}{24}$
61. $-\frac{3}{8}$ 63. $\frac{1}{21}$ 65. $-\frac{3}{7}$ 67. $\frac{30}{7}$ 69. $-\frac{1}{6}$ 71. -4.5
73. 12.92   75. 16.27   77. -36.66   79. 0.14314   81. 0.0000112
83. 0.282   85. -0.0016

1.3
1. 64   3. 10,000   5. -25   7. 108   9. -500   11. -64
13. $\frac{8}{125}$ 15. $\frac{1}{16}$ 17. 52   19. 12   21. 46   23. -22
25. -7   27. 0   29. -38   31. -1533   33. 0   35. -38
37. 147   39. 8   41. 0   43. 135   45. $\frac{35}{2}$ 47. $\frac{7}{15}$
49. $\frac{20}{21}$ 51. $\frac{28}{81}$ 53. -1   55. 0   57. 1   59. $\frac{9}{16}$

1.4
1. 139   3. -26   5. 75   7. -6   9. 37.24   11. -23
13. $-\frac{35}{6}$ 15. -11   17. 135   19. $\frac{7}{15}$ 21. 12a   23. 4x - 8y
25. $x^2 + y^2$ 27. $13xy - 7x^2y + 4xy^2$ 29. $-3a^2 - b^2 + 3c^2$ 31. 4 - 6x
33. -40y - 16   35. 13x - 4   37. -8a - 10b + 22c   39. -x
41. -3x + 10   43. -9y + 104   45. 42z + 17   47. -12a - 8b + 28c
49. -8   51. 8x + 17   53. -15x - 9   55. 0   57. 2x
59. $xy + yz + xz - 3y^2z$ 61. $7x^2y - 5y^2z - 4yz + 2xz$ 63. $2a^2b - 2bc^2 + 2bc + 2a^2c$
65. -8x + 8   67. -4x - 8   69. -1   71. x + 8   73. x - 14   75. 7x + 8
77. 2x - 5   79. x^2 81. x + 5x   83. $\frac{x}{x+8}$ 85. $x^3 - x$ 87. $10 - \frac{x}{4}$
89. 3(x + 5) - 4

1.5
1. $\{21, 22, 23, 24, 25, 26, 27, 28, 29\}$ 3. $\{-9, -8, -7, -6, -5, -4, -3, -2\}$
5. $\{-21, -19, -17, -15, -13, -11, -9, -7\}$ 7. $\{12, 14\}$ 9. ϕ
11. $\{-2, -1, 0, 1, 2, 3, 4\}$ 13. ϕ 15. $\{R, S, T, U, V, W, X, Y, Z\}$
17. $\{A, B, C, D, E, F, G, H, I, J, K\}$ 19. $\{M, N, O, P\}$
21. $A \cup B = \{1, 2, 3, 4, 5\}, A \cap B = \{2, 3, 4\}$
23. $A \cup B = \{a, b, c, d, e, f, g\}, A \cap B = \{c, d, e\}$

25. $A \cup B = \{-5, -4, -3, -2, -1, 0, 1, 2\}$, $A \cap B = \{-4, -3\}$

27. $A \cup B = \{1, 2, 3, 4, 5, 6, 7, 8, 11\}$, $A \cap B = \{1, 4\}$

29. $A \cup B = \{u, v, w, x, y, z\}$, $A \cap B = \{w, x, y\}$

31. $A \cup B = \{males\ in\ math\ 200\ or\ in\ english\ 1\}$,
    $A \cap B = \{males\ in\ both\ math\ 200\ and\ english\ 1\}$

33. $A \cup B = \{-17, -16, -15, -12, -10, -5\}$, $A \cap B = \{-10\}$

35. $A \cup B = \{-3, -2, -1, 0, 1, 2\}$, $A \cap B = \phi$

37. $A \cup B = \{a, b, c, x, y, z\}$, $A \cap B = \{a, b, x, y\}$

39. $A \cup B = \{-2, 1, 2, 3, 5, 6, 7, 8\}$, $A \cap B = \{5, 6, 8\}$

41. $A \cup B = \{a, b, c, d, e, f, g, h, i, j, k\}$, $A \cap B = \phi$

43. $A \cup B = \{x, y, z\}$, $A \cap B = \{x\}$

45. $A \cup B = \{-5, -4, -3, -2, 0, 2\}$, $A \cap B = \{-4, -2\}$

47. $A \cup B = \{1, 2, 3, 4, 5\}$, $A \cap B = \{5\}$

49. $A \cup B = \{7\}$, $A \cap B = \phi$

51. $\{x | x \in int\ egers,\ x < 40\}$ 53. $\{x | x > -12\}$

55. $\{x | x \in rational\ numbers,\ x < -1/2\}$ 57. $\{x | x \in int\ egers,\ x > -150,\ x < -8\}$

59. $\{x | x > -0.75,\ x < -0.675\}$ 61. $\{x | x\ is\ a\ multiple\ of\ -3\}$

63. $\{x | x\ is\ divisible\ by\ 7\}$ 65.. $\{x | x \in odd\ int\ egers,\ x > -12\}$

67. $\{x | x\ is\ a\ multiple\ of\ 3.8\}$ 69. $\{x | x \in irrational\ numbers,\ x\ is\ divisible\ by\ \pi\}$