

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. $-24x - 16$ 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. \emptyset
11. {-2, -1, 0, 1, 2, 3, 4} 13. \emptyset 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. $A \cup B = \{\text{males in math 200 or in english 1}\}$,
 $A \cap B = \{\text{males in both math 200 and english 1}\}$
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. $\{x | x \in \text{integers}, x < 40\}$
53. $\{x | x > -12\}$
55. $\{x | x \in \text{rational numbers}, x < -1/2\}$
57. $\{x | x \in \text{integers}, x > -150, x < -8\}$
59. $\{x | x > -0.75, x < -0.675\}$
61. $\{x | x \text{ is a multiple of } -3\}$
63. $\{x | x \text{ is divisible by } 7\}$
65. $\{x | x \in \text{odd integers}, x > -12\}$
67. $\{x | x \text{ is a multiple of } 3.8\}$
69. $\{x | x \in \text{irrational numbers}, x \text{ is divisible by } \pi\}$