

Additional Exercises Answers

2.1 Form I

1. linear 2. not linear 3. not linear 4. not linear 5. {12} 6. {11} 7. {13} 8. {23}
9. {0} 10. {0.8} 11. {22} 12. {-17} 13. {-26.7} 14. {13} 15. {-8.8} 16. \$74
17. \$53,865 18. \$11.95 19. 80 ounces 20. 4982 feet

2.1 Form II

1. linear 2. not linear 3. not linear 4. linear 5. {-14} 6. {19} 7. $\left\{\frac{1}{3}\right\}$ 8. $\left\{\frac{14}{5}\right\}$
9. {1.2} 10. $\left\{-\frac{3}{20}\right\}$ 11. {17.9} 12. $\left\{-\frac{15}{4}\right\}$ 13. {310} 14. {14.2} 15. {0} 16. \$101
17. \$67,290 18. \$13.35 19. 45 ounces 20. 6382 feet

2.1 Form III

1. linear 2. not linear 3. not linear 4. not linear 5. $\left\{\frac{7}{5}\right\}$ 6. $\left\{-\frac{7}{12}\right\}$ 7. {-1315}
8. {5.7} 9. {-13.5} 10. {-20} 11. {6} 12. {-61} 13. {-2} 14. {-3} 15. {0}
16. \$221 17. \$112,935 18. \$18.95 19. 31 ounces 20. 9882 feet

2.2 Form I

1. {20} 2. {-21} 3. {3} 4. {8} 5. $\left\{-\frac{1}{4}\right\}$ 6. {-11} 7. {10} 8. {6} 9. {4}
10. {-6} 11. {7} 12. {-7} 13. {0} 14. {1} 15. {-1} 16. 150 miles 17. 14 miles
18. 7.0 meters 19. 6000 joules 20. 288 ft/sec

2.2 Form II

1. {-24} 2. {-44} 3. {22} 4. $\left\{-\frac{1}{3}\right\}$ 5. {5} 6. $\left\{\frac{2}{5}\right\}$ 7. {36} 8. $\left\{-\frac{16}{5}\right\}$ 9. {15}
10. $\left\{\frac{8}{5}\right\}$ 11. {10} 12. $\left\{-\frac{4}{5}\right\}$ 13. $\left\{-\frac{11}{2}\right\}$ 14. $\left\{-\frac{9}{7}\right\}$ 15. $\left\{\frac{1}{2}\right\}$ 16. 247.5 miles
17. 15.0 meters 18. 7.9 meters 19. 6600 joules 20. 256 ft/sec

2.2 Form III

1. {91} 2. {0} 3. {-32} 4. {-9} 5. $\left\{\frac{25}{4}\right\}$ 6. $\left\{\frac{3}{5}\right\}$ 7. {-35} 8. {3} 9. {12}
10. {5} 11. $\left\{\frac{33}{4}\right\}$ 12. {-3} 13. {-4} 14. {-1} 15. $\left\{\frac{16}{5}\right\}$ 16. 437.5 miles
17. 22.4 meters 18. 8.2 meters 19. 8250 joules 20. 384 ft/sec

2.3 Form I

1. $\left\{\frac{1}{4}\right\}$ 2. $\left\{\frac{5}{4}\right\}$ 3. $\left\{-\frac{5}{2}\right\}$ 4. {1} 5. {6} 6. $\left\{\frac{3}{2}\right\}$ 7. {-8} 8. {2} 9. {25} 10. {45}
11. {21} 12. $\left\{\frac{6}{5}\right\}$ 13. {5} 14. {10} 15. {1} 16. 201.25 cm 17. 4 18. 89 mph
19. 5.5% 20. 30°

2.3 Form II

1. {-4} 2. {-8} 3. {9} 4. $\left\{\frac{89}{70}\right\}$ 5. {47} 6. $\{x \mid x \text{ is a real number}\}$ 7. {-6} 8. {2}
9. {3} 10. $\left\{\frac{1}{2}\right\}$ 11. {-14} 12. {28} 13. {75} 14. $\left\{\frac{1}{2}\right\}$ 15. {12} 16. 196.77 cm
17. 3 18. 85 mph 19. 6.5% 20. 35°

2.3 Form III

1. \emptyset 2. {2} 3. {-5} 4. {4} 5. $\{x \mid x \text{ is a real number}\}$ 6. {-12} 7. {-16} 8. {3}
9. {-2} 10. {-10} 11. {4} 12. {3} 13. $\left\{\frac{1}{2}\right\}$ 14. {-1} 15. $\left\{\frac{11}{18}\right\}$ 16. 187.81 cm
17. 5 18. 91 mph 19. 7.5% 20. 25°

2.4 Form I

1. $t = \frac{I}{Pr}$ 2. $h = \frac{3V}{B}$ 3. $s_3 = P - s_1 - s_2$ 4. $b = y - mx$ 5. $y = \frac{C - Ax}{B}$
6. $b = 25 - a - c$ 7. 15 8. 200 9. 20% 10. 0.36 11. 50 12. 2% 13. 20.52 14. 7.37
15. 250 16. 25% 17. \$45.60 18. 23% 19. 34,650 people 20. 560 students

2.4 Form II

1. $A = \frac{C - By}{x}$ 2. $B = \frac{3V}{h}$ 3. $C = \frac{5}{9}(F - 32)$ 4. $w = \frac{P - 2l}{2}$ 5. $r = \frac{I}{Pt}$ 6. $x = \frac{y - b}{m}$
7. 2 8. 200 9. 25% 10. 6.48 500 6 12. 800 13. 95.2 14. 72 15. 60 16. 120%
17. \$63.75 18. 77.8% 19. 24,150 people 20. 1225 students

2.4 Form III

1. $h = \frac{S - 2\pi r^2}{2\pi r}$ 2. $B = \frac{C - Ax}{y}$ 3. $a = 2s - b - c$ 4. $R = \frac{PV}{nT}$ 5. $s_1 = P - s_2 - s_3$
6. $l = \frac{P - 2w}{2}$ 7. 27 8. 85 9. 12.5% 10. 700 11. 10% 12. 49 13. 95.2 14. 72
15. 85 16. 120% 17. \$74.63 18. 26.5% 19. 31,115 people 20. 1040 students

2.5 Form I

1. $11x + 13$ 2. $7x - 59$ 3. $\frac{42}{-7x}$ 4. $-27(x + 25)$ 5. $2(x + -41)$ 6. $\frac{25x}{-8}$
7a. $4x + 7x = 44$ b. 4 8a. $\frac{3}{4}x = \frac{1}{2}$ b. $\frac{2}{3}$ 9a. $\frac{x}{42} + 7 = 13$ b. 252 10a. $x + 3x = 180000$
b. \$45,000, \$135,000 11a. $x + 3x + 2x = 30$ b. 5, 15, 10 marbles 12a. $15 + 0.05x = 55$
b. 800 minutes

2.5 Form II

1. $3x + 11$ 2. $8x - 9$ 3. $\frac{7}{9x}$ 4. $14(x - 5)$ 5. $\frac{x}{8} - 2$ 6. $\frac{2}{5}x + 3$ 7a. $7x - 3x = 44$ b. 11
8a. $4x + 7 = 2x - 8$ b. $-\frac{15}{2}$ 9a. $9x - 6 = 3x$ b. 1 10a. $x + 3x - 2 = 90$ b. $23^\circ, 67^\circ$
11a. $2x = 120$ b. 60 sq ft 12a. $2x + 2(2x) = 120$ b. 20 meters, 40 meters

2.5 Form III

1. $\frac{3}{7}x + 4$ 2. $13 - 4x$ 3. $\frac{19}{-2x}$ 4. $-11(x - 8)$ 5. $2(x + 9)$ 6. $3x + 40$ 7a. $5x + -6 = 11x$
b. -1 8a. $6(x + 2) = 48$ b. 6 9a. $7x + 5 = 2x + 10$ b. 1 10a. $x + x + (x - 45) = 180$
b. $75^\circ, 75^\circ, 30^\circ$ 11a. $x + (x + 18) = 108$ b. 45 juniors, 63 sophomores 12a. $2x + 2(5x) = 144$
b. 12 inches, 60 inches

2.6 Form I

- 1a. 22 inches b. 28 in.^2 2a. 24 inches b. 24 ft.^2 3a. 54 inches b. 216 in.^2
4. 64π square centimeters; 113 cm.^2 5. 36π square inches; 113 in.^2 6. 8π square ft.; 25 feet
7. 20π cm.; 63 cm. 8. 12π cubic inches; 38 in.^3 9. 64π cubic centimeters; 201 cm.^3
10. 20π cubic inches; 63 in.^3 11. 105 cubic inches 12. 138° 13. 53°
14. Width 7 feet; length 11 feet 15. 5 inches, 11 inches and 15 inches 16. $55^\circ, 57^\circ$, and 68°

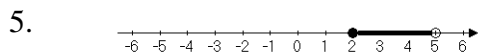
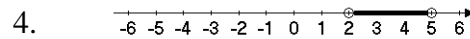
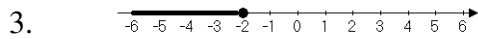
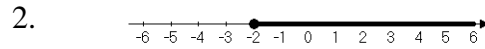
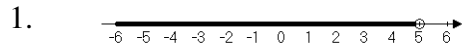
2.6 Form II

- 1a. 37 inches b. 78 sq. in. 2a. 40 cm. b. 64 sq. cm. 3. 296 sq. in.
4. 49π square inches; 154 in.^2 5. 20.25π square centimeters; 64 cm.^2 6. 4.8π feet; 15 feet
7. 16π cubic centimeters; 50 cm.^3 8. 4608π cubic inches; 147 in.^3
9. 4.5π cubic decimeters; 14 dm.^3 10. 3 meters 11. 34° and 56°
12. Width 5.5 feet; length 11 feet 13. 240 cubic feet 14. $38^\circ, 59^\circ$ and 83°
15. $36.2^\circ, 41.2^\circ$ and 102.6° 16. 17 inches by 92 inches

2.6 Form III

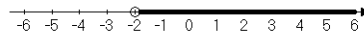
- 1a. 34.08 in. b. 58.752 in.^2 2a. 38.63 cm. b. 63.44 cm^2 3. 331.2 in.^2
4. $331.24\pi \text{ mm}^2$; 1041 mm^2 5. 24.8π inches; 78 inches 6. 8π cubic inches; 25 in.^3
7. 370.301π cubic centimeters 8. $47.916\pi \text{ in.}^3$ 9. 1444 ft.^2 10. 14 meters 11. 8 inches
12. 39.68 ft.^3 13. 65° and 115° 14. 39° and 102° 15. $20.5^\circ, 41^\circ$ and 118.5°
16. 979 square feet

2.7 Form I

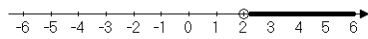


6. $\{x | x > 1\}$ 7. $\{x | x \geq 2\}$

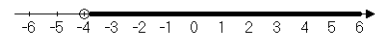
8. $\{x | x \leq -1\}$ 9. $\{x | x < 1\}$ 10. $\{x | x > -2\}$



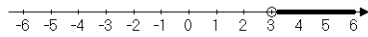
11. $\{x | x > 2\}$



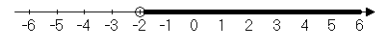
12. $\{x | x > -4\}$



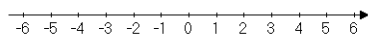
13. $\{x | x > 3\}$



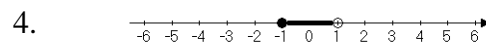
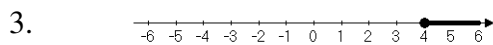
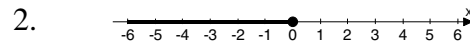
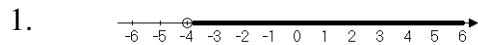
14. $\{x | x > -2\}$

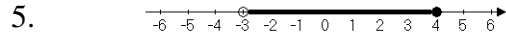


15. \emptyset



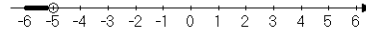
2.7 Form II



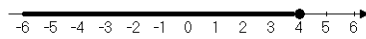


6. $\{x \mid x > -2\}$ 7. $\{x \mid x \geq 0\}$

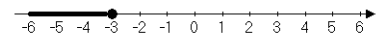
8. $\{x \mid x \leq -3\}$ 9. $\{x \mid x \leq 4\}$ 10. $\{x \mid x < -5\}$



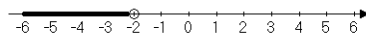
11. $\{x \mid x \leq 4\}$



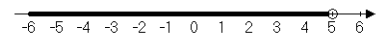
12. $\{x \mid x \leq -3\}$



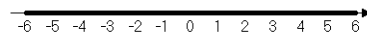
13. $\{x \mid x < -2\}$



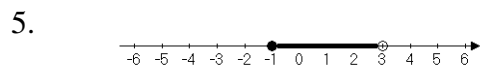
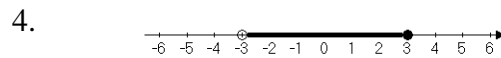
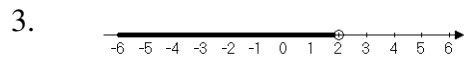
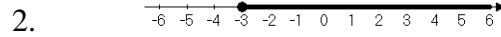
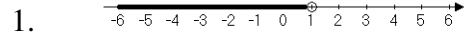
14. $\{x \mid x < 5\}$



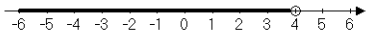
15. $\{x \mid x \text{ is a real number}\}$

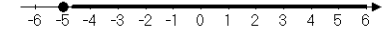


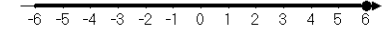
2.7 Form III

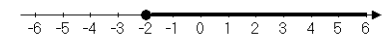


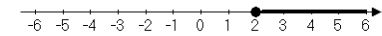
6. $\{x \mid x > -4\}$ 7. $\{x \mid x \geq -2\}$ 8. $\{x \mid x < 3\}$ 9. $\{x \mid x \leq -2\}$

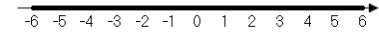
10a. $\{x \mid x < 4\}$ b.  A number line from -6 to 6 with tick marks at every integer. An open circle is drawn at 4, and a ray extends to the left from this circle, passing through 3, 2, 1, 0, -1, -2, -3, -4, -5, and -6.

11a. $\{x \mid x \geq -5\}$ b.  A number line from -6 to 6 with tick marks at every integer. A closed circle is drawn at -5, and a ray extends to the right from this circle, passing through -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, and 6.

12a. $\{x \mid x \leq 6\}$ b.  A number line from -6 to 6 with tick marks at every integer. A closed circle is drawn at 6, and a ray extends to the left from this circle, passing through 5, 4, 3, 2, 1, 0, -1, -2, -3, -4, and -5.

13a. $\{x \mid x \geq -2\}$ b.  A number line from -6 to 6 with tick marks at every integer. A closed circle is drawn at -2, and a ray extends to the right from this circle, passing through -1, 0, 1, 2, 3, 4, 5, and 6.

14a. $\{x \mid x \geq 2\}$ b.  A number line from -6 to 6 with tick marks at every integer. A closed circle is drawn at 2, and a ray extends to the right from this circle, passing through 3, 4, 5, and 6.

15a. $\{x \mid x \text{ is a real number}\}$ b.  A number line from -6 to 6 with tick marks at every integer. A solid line is drawn across the entire number line, with arrows at both ends pointing to the left and right, indicating that all real numbers are included.