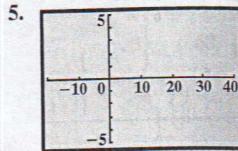
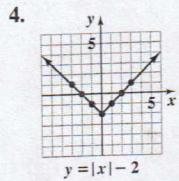
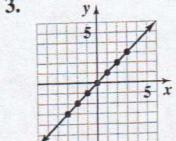
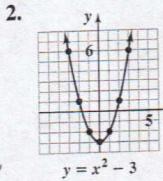
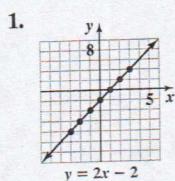


AA12 Answers to Selected Exercises

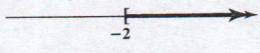
Chapter 1 Review Exercises



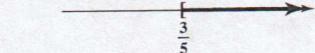
1. x -intercept: -2 ; y -intercept: 2 2. x -intercepts: $-2, 2$; y -intercept: -4 3. x -intercept: 5 ; no y -intercept 4. x -intercept: 5 ; no y -intercept 5. $(1985, 50\%)$ 10. 35%
6. x -intercept: -2 ; y -intercept: 2 7. x -intercepts: $-2, 2$; y -intercept: -4 8. x -intercept: 5 ; no y -intercept 9. $(1985, 50\%)$ 10. 35%
11. $1945; 94\%$ 12. $1990; 28\%$ 13. $1950-1960; 91\%$ 14. $1930-1935; 38\%$ 15. $\{6\}$; conditional equation
16. $\{-10\}$; conditional equation 17. $\{5\}$; conditional equation 18. $\{-13\}$; conditional equation 19. $\{-3\}$; conditional equation
20. $\{-1\}$; conditional equation 21. \emptyset ; inconsistent equation 22. all real numbers; identity 23. $\{2\}$; conditional equation
24. $\{2\}$; conditional equation 25. $\left\{\frac{72}{11}\right\}$; conditional equation 26. $\left\{\frac{36}{7}\right\}$; conditional equation 27. $\left\{\frac{77}{15}\right\}$; conditional equation
28. $\{2\}$; conditional equation 29. \emptyset ; inconsistent equation 30. all real numbers except -1 and 1 ; identity
31. $\left\{\frac{5}{2}\right\}$; conditional equation 32. \emptyset ; inconsistent equation 33. $\left\{\frac{4}{7}\right\}$; conditional equation 34. $\left\{\frac{1}{2}\right\}$; conditional equation
35. $\{2\}$; conditional equation 36. U.S.: 20.5 million barrels; China: 6.3 million barrels; Japan: 5.5 million barrels 37. by 19 years after 2000, or in 2019
38. 500 min 39. \$60 40. \$10,000 in sales 41. \$2500 at 4%; \$6500 at 7% 42. \$4500 at 2%; \$3500 at 5% 43. 44 yd by 126 yd
44. a. $14,100 + 1500x = 41,700 - 800x$ b. 2021; 32,100 45. $g = \frac{s - vt}{t^2}$ 46. $g = \frac{T}{r + vt}$ 47. $P = \frac{A}{1 + rt}$ 48. $-9 + 4i$
49. $-12 - 8i$ 50. $17 + 19i$ 51. $-7 - 24i$ 52. 113 53. $\frac{15}{13} - \frac{3}{13}i$ 54. $\frac{1}{5} + \frac{11}{10}i$ 55. $i\sqrt{2}$ 56. $-96 - 40i$
57. $2 + i\sqrt{2}$ 58. $\left\{-8, \frac{1}{2}\right\}$ 59. $\{-4, 0\}$ 60. $\{-8, 8\}$ 61. $\{-4i, 4i\}$ 62. $\{-3 - i\sqrt{10}, -3 + i\sqrt{10}\}$ 63. $\left\{\frac{4 - 3\sqrt{2}}{3}, \frac{4 + 3\sqrt{2}}{3}\right\}$
64. $100; (x + 10)^2$ 65. $\frac{9}{4}; \left(x - \frac{3}{2}\right)^2$ 66. $\{3, 9\}$ 67. $\left\{2 + \frac{\sqrt{3}}{3}, 2 - \frac{\sqrt{3}}{3}\right\}$ 68. $\{1 + \sqrt{5}, 1 - \sqrt{5}\}$ 69. $\{1 + 3i\sqrt{2}, 1 - 3i\sqrt{2}\}$
70. $\left\{\frac{-2 + \sqrt{10}}{2}, \frac{-2 - \sqrt{10}}{2}\right\}$ 71. 2 complex imaginary solutions 72. 2 unequal real solutions that are rational 73. $\left\{\frac{1}{2}, 5\right\}$ 74. $\left\{-2, \frac{10}{3}\right\}$
75. $\left\{\frac{7 + \sqrt{37}}{6}, \frac{7 - \sqrt{37}}{6}\right\}$ 76. $\{-3, 3\}$ 77. $\{-2, 8\}$ 78. $\left\{\frac{1}{6} + i\frac{\sqrt{23}}{6}, \frac{1}{6} - i\frac{\sqrt{23}}{6}\right\}$ 79. $\left\{-\frac{2}{3}, 4\right\}$ 80. $\{-2 - 2i, -2 + 2i\}$
81. $\{4 + \sqrt{5}, 4 - \sqrt{5}\}$ 82. 14 weeks 83. a. 70.2%; overestimates by 0.2% b. 2010 84. length = 5 yd; width = 3 yd
85. approximately 134 m 86. $\{-5, 0, 5\}$ 87. $\left\{-3, \frac{1}{2}, 3\right\}$ 88. $\{2\}$ 89. $\{8\}$ 90. $\{16\}$ 91. $\{-118, 132\}$ 92. $\{-2, -1, 1, 2\}$
93. $\{16\}$ 94. $\{-4, 3\}$ 95. $\{-5, 11\}$ 96. $\left\{-1, -\frac{2\sqrt{6}}{9}, \frac{2\sqrt{6}}{9}, 1\right\}$ 97. $\{2\}$ 98. $\{1, 4\}$ 99. $\{-3, -2, 3\}$ 100. $\{3\}$
101. $\{-3, -\sqrt{2}, \sqrt{2}\}$ 102. $\{-4, 2\}$ 103. by 16 years after 1993, or in 2009
104. $\{x \mid -3 \leq x < 5\}$ 105. $\{x \mid x > -2\}$ 106. $\{x \mid x \leq 0\}$ 107. $[-1, 1]$ 108. $(-2, 3)$
109. $[1, 3]$ 110. $(0, 4)$



111. $[-2, \infty)$



112. $\left[\frac{3}{5}, \infty\right)$



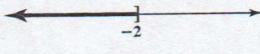
113. $\left(-\infty, -\frac{21}{2}\right)$



114. $(-3, \infty)$



115. $(-\infty, -2]$

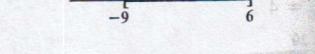


116. \emptyset

117. $(2, 3]$



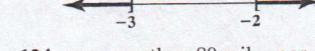
118. $[-9, 6]$



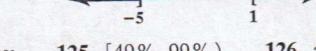
119. $(-\infty, -6) \cup (0, \infty)$



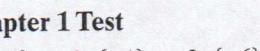
120. $(-\infty, -3] \cup [-2, \infty)$



121. $(-\infty, -5] \cup [1, \infty)$



122. $(-\infty, -1)$



123. $[-2, 7]$

124. no more than 80 miles per day

125. $[49\%, 99\%]$

126. at least \$120,000

Chapter 1 Test

1. $\{-1\}$

2. $\{-1\}$

3. $\{-6\}$

4. $\{5\}$

5. $\left\{-\frac{1}{2}, 2\right\}$

6. $\left\{\frac{1 - 5\sqrt{3}}{3}, \frac{1 + 5\sqrt{3}}{3}\right\}$

7. $\{-3 - 5i, -3 + 5i\}$

8. $\{1 - \sqrt{5}, 1 + \sqrt{5}\}$

9. $\left\{1 + \frac{1}{2}i, 1 - \frac{1}{2}i\right\}$

10. $\{-1, 1, 4\}$

11. $\{7\}$

12. $\{2\}$

13. $\{5\}$

14. $\{\sqrt[3]{4}\}$

15. $\{1, 512\}$

16. $\{6, 12\}$

17. $\left\{\frac{1}{2}, 3\right\}$

18. $\{2 - \sqrt{3}, 2 + \sqrt{3}\}$

19. $\{4\}$

20. $(-\infty, 12]$



21. $\left[\frac{21}{8}, \infty\right)$



22. $\left[-7, \frac{13}{2}\right)$



23. $\left(-\infty, -\frac{5}{3}\right] \cup \left[\frac{1}{3}, \infty\right)$

