

# AA6 Answers to Selected Exercises

11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. c 30. d 31. b 32. a 33. c 34. b 35. no 36. yes 37. (2, 0) 38. (0, 2) 39. (-2, 4) and (1, 1) 40. -2 and 1 41. a. 2 b. -4 42. a. 1 b. 2 43. a. 1, -2 b. 2 44. a. 1, -1 b. 1 45. a. -1 b. none 46. a. none b. 2 47.  $y = 2x + 4$  48.  $y = 4 - 2x$  49.  $y = 3 - x^2$  50.  $y = x^2 + 2$  51. 52. 53. 54. 55. a. 20% b. 18%; underestimates by 2% c. Answers will vary; approximately 45% d. 44%; It's less than the estimate. e. 1990; 14% 56. a. 50% b. 50%; The model provides an exact description of the data. c. Answers will vary; approximately 22% d. 20%; It's less than the estimate. e. 1980; 72% 57. 8; 1 58. 65; 8 59. about 1.9 60. about 1.1 61. makes sense 62. does not make sense 63. does not make sense 64. does not make sense 65. false 66. false 67. true 68. false 69. does not make sense 70. does not make sense 71. false 72. false 73. true 74. false 75. a 76. d 77. b 78. c 79. b 80. a 81. c 82. b 83. true 84.  $-x + 10$  85.  $9x - 24$

## Section 1.2

### Check Point Exercises

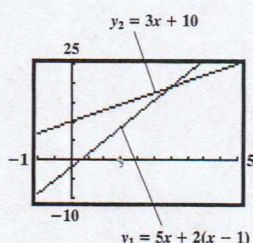
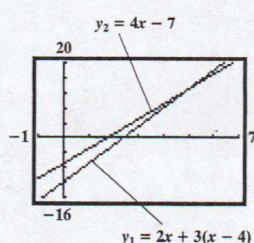
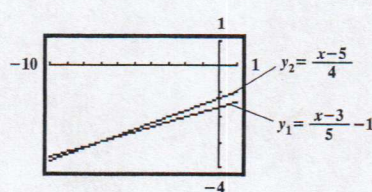
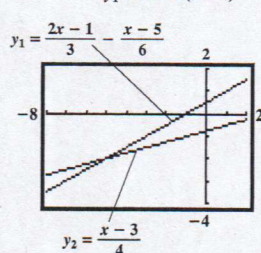
1. {6} 2. {5} 3. {1} 4. {3} 5.  $\emptyset$  6. 11 7.  $\emptyset$ ; inconsistent equation 8. 3.7; by the point (3.7, 10)

### Exercise Set 1.2

1. {11} 2. {11} 3. {7} 4.  $\left\{\frac{25}{3}\right\}$  5. {13} 6. {8} 7. {2} 8. {-19} 9. {9} 10. {-1} 11. {-5} 12. {-4} 13. {6} 14. {3} 15. {-2} 16.  $\left\{-\frac{81}{11}\right\}$  17. {12} 18. {30} 19. {24} 20. {15} 21. {-15} 22. {-20} 23. {5} 24. {7} 25.  $\left\{\frac{33}{2}\right\}$  26. {1} 27. {-12} 28. {-19} 29.  $\left\{\frac{46}{5}\right\}$  30.  $\left\{\frac{25}{7}\right\}$  31. a. 0 b.  $\left\{\frac{1}{2}\right\}$  32. a. 0 b.  $\left\{\frac{5}{12}\right\}$  33. a. 0 b. {-2} 34. a. 0 b.  $\left\{\frac{1}{4}\right\}$  35. a. 0 b. {2} 36. a. 0 b. {3} 37. a. 0 b. {4} 38. a. 0 b. {8} 39. a. 1 b. {3} 40. a. -4 b. {-3} 41. a. -1 b.  $\emptyset$  42. a. 2 b.  $\emptyset$  43. a. 1 b. {2} 44. a. -3, 2 b. {-8}



45. a. -2, 2    b.  $\emptyset$     46. a. -2, 2    b.  $\emptyset$     47. a. -1, 1    b.  $\{-3\}$     48. a. -5, 5    b.  $\{7\}$     49. a. -2, 4    b.  $\emptyset$   
 50. a. -3, 2    b.  $\{7\}$     51. 6    52. 3    53. -7    54. 59    55. 2    56. 3    57. 19    58. 6    59. -1    60. 1    61. identity  
 62. inconsistent equation    63. inconsistent equation    64. identity    65. conditional equation    66. conditional equation  
 67. inconsistent equation    68. inconsistent equation    69.  $\{-7\}$ ; conditional equation    70.  $\left\{\frac{46}{5}\right\}$ ; conditional equation  
 71.  $\emptyset$ ; inconsistent equation    72.  $\emptyset$ ; inconsistent equation    73.  $\{-4\}$ ; conditional equation    74. all real numbers; identity  
 75.  $\{8\}$ ; conditional equation    76.  $\{6\}$ ; conditional equation    77.  $\{-1\}$ ; conditional equation    78.  $\{3\}$ ; conditional equation  
 79.  $\emptyset$ ; inconsistent equation    80.  $\left\{\frac{1}{7}\right\}$ ; conditional equation    81.  $3(x-4) = 3(2-2x)$ ;  $\{2\}$     82.  $3(2x-5) = 5x+2$ ;  $\{17\}$   
 83.  $-3(x-3) = 5(2-x)$ ;  $\{0.5\}$     84.  $2x-5 = 4(3x+1)-2$ ;  $\{-0.7\}$     85. 2    86. 6    87. -7    88. -5    89.  $\{-2\}$     90.  $\{3\}$   
 91.  $\emptyset$  or no solution    92.  $\emptyset$  or no solution    93.  $\{10\}$     94.  $\{0\}$     95.  $\{-2\}$     96.  $\left\{\frac{4}{3}\right\}$     97. 142 pounds; 13 pounds  
 98. 178 pounds; 6 pounds    99. a. \$32,000    b. \$32,616; \$616    c. \$32,597; \$597    100. a. \$24,000    b. \$23,966; \$34    c. \$24,197; \$197  
 101. 2013    102. 2025    103. 11 learning trials; (11, 0.95)    104. 1 learning trial; (1, 0.5)    105. 125 liters    106. a.  $C = \frac{x + 0.35(200)}{x + 200}$   
 b. 300 liters

 116.  $\{3\}$ 

 117.  $\{5\}$ 

 118.  $\{-7\}$ 

 119.  $\{-5\}$ 


120. does not make sense    121. makes sense    122. makes sense    123. makes sense  
 124. false    125. false    126. true    127. false  
 129. 2    130. 20    131.  $x + 150$     132.  $20 + 0.05x$     133.  $4x + 400$

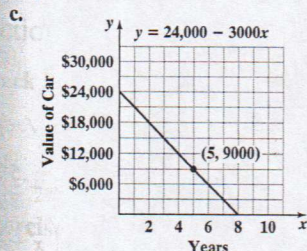
## Section 1.3

### Check Point Exercises

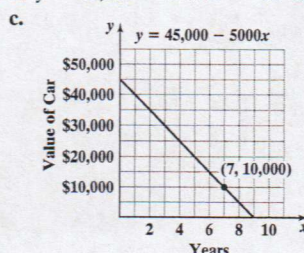
1. women: \$57,989; men: \$72,026    2. by 50 years after 1969, or in 2019    3. 300 min    4. \$1200    5. \$3150 at 9%; \$1850 at 11%  
 6. 50 ft by 94 ft    7.  $w = \frac{P-2l}{2}$     8.  $C = \frac{P}{1+M}$

### Exercise Set 1.3

1. 6    2. 7    3. 25    4. 40    5. 120    6. 140    7. 320    8. 360    9. 19 and 45    10. 17 and 41    11. 2    12. 5    13. 8  
 14. 2    15. all real numbers    16. 1    17. 5    18. -9    19. radio: 974 hr; TV: 1555 hr    20. Americans: 3.9 weeks; Italians: 7.9 weeks  
 21. carpenters: \$35,580; computer programmers: \$63,420    22. janitors: \$19,390; registered nurses: \$54,670    23. by 38 years after 1983, or in 2021  
 24. by 30 years after 1986, or in 2016  
 25. a.  $y = 24,000 - 3000x$     b. after 5 years



26. a.  $y = 45,000 - 5000x$     b. after 7 years



27. after 5 months; \$165    28. 10 rentals; \$90    29. 30 times    30. 20 times    31. a. 2014; 22,300 students  
 b.  $y_1 = 13,300 + 1000x$ ;  $y_2 = 26,800 - 500x$     32. 2025; 9,900,000    33. \$420    34. \$44    35. \$150    36. \$240    37. \$467.20    38. \$12  
 39. \$2000 at 6%; \$5000 at 8%    40. \$5000 at 5%; \$6000 at 8%    41. \$6000 at 12%; \$2000 at a 5% loss    42. \$7000 at 14%; \$5000 at a 6% loss  
 43. 50 yd by 100 yd    44. 40 ft by 120 ft    45. 36 ft by 78 ft    46. 23 m by 40 m    47. 2 in.    48. 6 ft    49. 11 hr    50. 17 hr  
 51. 5 ft 7 in.    52. \$1350    53. 7 oz    54. 11 min    55.  $w = \frac{A}{l}$     56.  $R = \frac{D}{T}$     57.  $b = \frac{2A}{h}$     58.  $B = \frac{3V}{h}$     59.  $P = \frac{I}{rt}$     60.  $r = \frac{C}{2\pi}$   
 61.  $m = \frac{E}{c^2}$     62.  $h = \frac{V}{\pi r^2}$     63.  $p = \frac{T-D}{m}$     64.  $M = \frac{P-C}{C}$     65.  $a = \frac{2A}{h} - b$     66.  $b = \frac{2A}{h} - a$     67.  $r = \frac{S-P}{Pt}$   
 68.  $t = \frac{S-P}{Pr}$     69.  $S = \frac{F}{B} + V$     70.  $r = -\frac{C}{S} + 1$     71.  $I = \frac{E}{R+r}$     72.  $h = \frac{A-2lw}{2l+2w}$     73.  $f = \frac{pq}{p+q}$     74.  $R_1 = \frac{RR_2}{R_2-R}$