

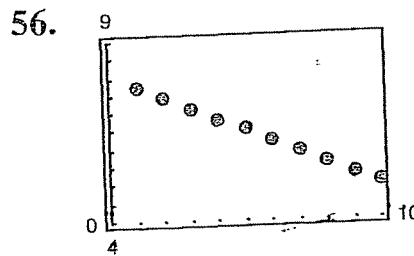
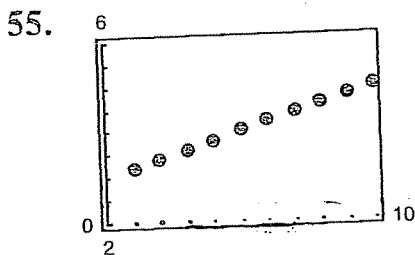
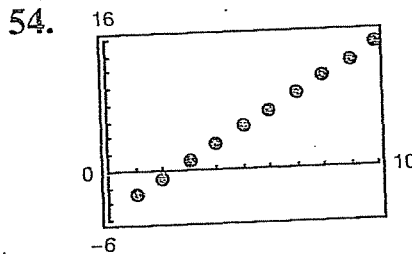
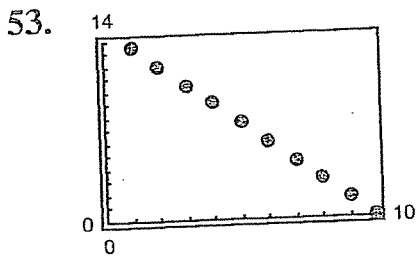
Vocabulary Check (page 821)

- 1. arithmetic; common
- 2. $a_n = dn + c$
- 3. sum of a finite arithmetic sequence

- 1. Arithmetic sequence, $d = -2$
- 2. Arithmetic sequence, $d = 3$
- 3. Not an arithmetic sequence
- 4. Not an arithmetic sequence
- 5. Arithmetic sequence, $d = -\frac{1}{4}$
- 6. Arithmetic sequence, $d = -\frac{1}{2}$
- 7. Not an arithmetic sequence
- 8. Arithmetic sequence, $d = 0.4$
- 9. Not an arithmetic sequence
- 10. Not an arithmetic sequence
- 11. 8, 11, 14, 17, 20
Arithmetic sequence, $d = 3$
- 12. 97, 94, 91, 88, 85
Arithmetic sequence, $d = -3$
- 13. 7, 3, -1, -5, -9
Arithmetic sequence, $d = -4$
- 14. 1, 5, 9, 13, 17
Arithmetic sequence, $d = 4$
- 15. -1, 1, -1, 1, -1
Not an arithmetic sequence

- 16. 1, 2, 4, 8, 16
Not an arithmetic sequence
- 17. $-3, \frac{3}{2}, -1, \frac{3}{4}, -\frac{3}{5}$
Not an arithmetic sequence
- 18. 2, 8, 24, 64, 160
Not an arithmetic sequence

19. $a_n = 3n - 2$ 20. $a_n = 4n + 11$
 21. $a_n = -8n + 108$ 22. $a_n = -\frac{2}{3}n + \frac{2}{3}$
 23. $a_n = 2xn - x$ 24. $a_n = 5yn - 6y$
 25. $a_n = -\frac{5}{2}n + \frac{13}{2}$ 26. $a_n = -5n + 15$
 27. $a_n = \frac{10}{3}n + \frac{5}{3}$ 28. $a_n = 5n - 9$
 29. $a_n = -3n + 103$ 30. $a_n = -15n + 265$
 31. 5, 11, 17, 23, 29 32. $5, \frac{17}{4}, \frac{7}{2}, \frac{11}{4}, 2$
 33. -2.6, -3.0, -3.4, -3.8, -4.2
 34. 16.5, 16.75, 17, 17.25, 17.5
 35. 2, 6, 10, 14, 18 36. 1, 6, 11, 16, 21
 37. -2, 2, 6, 10, 14 38. 22.45, 20.725, 19, 17.275, 15.55
 39. 15, 19, 23, 27, 31; $d = 4$; $a_n = 4n + 11$
 40. 6, 11, 16, 21, 26; $d = 5$; $a_n = 5n + 1$
 41. 200, 190, 180, 170, 160; $d = -10$; $a_n = -10n + 210$
 42. 72, 66, 60, 54, 48; $d = -6$; $a_n = -6n + 78$
 43. $\frac{5}{8}, \frac{1}{2}, \frac{3}{8}, \frac{1}{4}, \frac{1}{8}$; $d = -\frac{1}{8}$; $a_n = -\frac{1}{8}n + \frac{3}{4}$
 44. 0.375, 0.625, 0.875, 1.125, 1.375; $d = 0.25$;
 $a_n = 0.25n + 0.125$
 45. 59 46. 83 47. 18.6 48. -92.4 49. b
 50. d 51. c 52. a



57. 620 58. 1850 59. 17.4 60. 23 61. 265
 62. 375 63. 4000 64. 16,100 65. 10,000
 66. 1220 67. 1275 68. 10,100 69. 30,030
 70. 26,425 71. 355 72. 2500 73. 160,000

74. 218,625 75. 520 76. 44,625 77. 2725
 78. -896.375 79. 10,120 80. 1402.5
 81. (a) \$40,000 (b) \$217,500
 82. (a) \$45,550 (b) \$247,050
 83. 2340 seats 84. 2430 seats 85. 405 bricks
 86. 203 bricks 87. 490 meters 88. 784 feet
 89. (a) $a_n = -25n + 225$ (b) \$900
 90. (a) $a_n = 1300 - 100n$ (b) \$7800
 91. \$70,500; answers will vary. 92. \$375,000

93. (a)

Month	1	2	3	4	5	6
Monthly payment	\$220	\$218	\$216	\$214	\$212	\$210
Unpaid balance	\$1800	\$1600	\$1400	\$1200	\$1000	\$800

(b) \$110

94. (a)

Month	1	2	3	4
Payment	\$300.00	\$297.50	\$295.00	\$292.50
Unpaid balance	\$4750	\$4500	\$4250	\$4000

Month	5	6	7	8
Payment	\$290.00	\$287.50	\$285.00	\$282.50
Unpaid balance	\$3750	\$3500	\$3250	\$3000

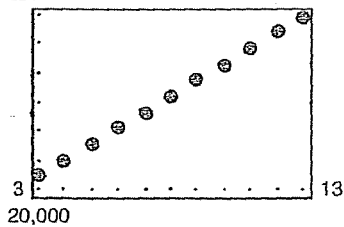
Month	9	10	11	12
Payment	\$280.00	\$277.50	\$275.00	\$272.50
Unpaid balance	\$2750	\$2500	\$2250	\$2000

(b) \$525.00

95. (a) $a_n = 1098n + 17,588$

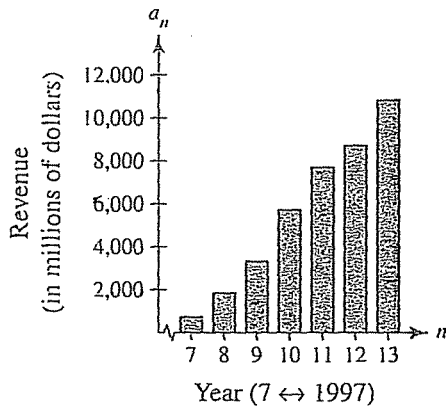
(b) $a_n = 1114.9n + 17,795$; the models are similar.

(c) $32,000$ (d) 2004: \$32,960
2005: \$34,058



(e) Answers will vary.

96. (a)



(b) $a_n = 1726.93n - 11,718.43$

(c) $\sum_{n=7}^{13} a_n$; \$38,856 (d) \$19,366.31

97. True. Given a_1 and a_2 , $d = a_2 - a_1$ and $a_n = a_1 + (n - 1)d$.