

55. $E = 5; J = 19$

$$\frac{1}{2}(J + 5) = 3(E - 1)$$

$$(J + 1) + (E + 1) = 26$$

56. $G = 5; H = 13$

$$G - 1 = \frac{1}{3}(H - 1)$$

$$H + 3 = 2(G + 3)$$

57. 3. $\frac{1}{3}G = \frac{1}{2}(G - 1)$

58. 6. $K - 2 = \frac{1}{3}(2K)$

59. 6. $3M - 8 = 2(M - 1)$

60. a. 12 b. 10 c. 3

$$L = H + 2$$

$$H = M + 7$$

$$M = \frac{1}{4}L$$

61. $D = 12; S_1 = 6 \quad S_2 = 8$

$$D + s_1 + s_2 = 26$$

$$D = 2s_1$$

$$D = \frac{3}{2}s_2$$

62. $C + D - E = 2D + 3$

$$C + E - D = 2C - 7$$

a. 2

b. Chester is five years older than Elwood.

63. 10. $K = 2\left(\frac{1}{5}K + 3\right)$

64. 12. $\frac{1}{2}(E + 2) = \frac{1}{3}E + 3$

65. $B = 12; E = 6; G = 8$

$$B = 2E$$

$$B = \frac{3}{2}G$$

$$B + E + G = 26$$

COINS (pp. 74-87)

66. a. $11n, 4d$

$$n + d = 15$$

$$n = d + 7$$

b. 95¢

$$11(5¢) + 4(10¢)$$

67. a. $8d, 6q$

$$q = d - 2$$

$$q + d = 14$$

b. \$2.30

$$8(\$.10) + 6(\$.25)$$

68. a. $5n, 12d$

$$n + d = 17$$

$$5n + 10d = 145$$

b. $16n, 1d$

$$n + d = 17$$

$$5n + 10d = 90$$

69. $52n, 45d$

$$n + d = 97$$

$$5n + 10d = 710$$

70. a. $8n, 4d$

$$n = 2d$$

$$5n + 10d = 80$$

b. $12n, 6d$

$$n = 2d$$

$$5n + 10d = 120$$

71. a. $24d; 12q$

$$d = 2q$$

$$d - 5 = q + 7$$

b. \$5.40

$$24(\$.10) + 12(\$.25)$$

72. a. $10n, 3d$

$$n = d + 7$$

$$5n + 10d = 80$$

b. $9n, 2d$

$$n = d + 7$$

e. $18p, 9n, 13d$

$$p + 5n + 10d = 193$$

$$d = \frac{1}{2}(n + p) - \frac{1}{2}$$

$$n = \frac{1}{2}p$$

91. $25p, 18n, 22d$

$$d = n + 4$$

$$n = p - 7$$

$$p + 5n + 10d = 335$$

92. $10n, 5d, 10q$

$$q = 2d$$

$$d = \frac{1}{2}n$$

$$5n + 10d + 25q = 350$$

93. a. $24n, 48d, 16q$

$$25q = 5n + 280$$

$$n = \frac{1}{2}d$$

$$10d = 25q + 80$$

b. nickels, \$1.20; dimes, \$4.80;
quarters, \$4.00
\$.05(24); \$.10(48); \$.25(16)

c. \$10.00

$$\$1.20 + \$4.80 + \$4.00$$

94. $15p, 19n, 19d, 5q$

$$n + d = p + q + 18$$

$$p = 3q$$

$$n = d$$

$$p + 5n + 10d + 25q = 425$$

95. a. \$1.50. $2m - \frac{1}{3}m = \$2.50$

b. 50¢. $\frac{1}{3}(150¢)$

c. $5d, 4q$

$$10d + 25q = 150$$

$$d + q = 9$$

Or part c can be solved without using part b:

$$2(10d + 25q) - \frac{1}{3}(10d + 25q) = 250$$

$$d + q = 9$$

96. a. $21n, 24d$

$$(n + 5)5 + 2(n + 5)10 =$$

$$5n + 10d + 305$$

$$d = n + 3$$

b. \$3.45

$$21(\$0.05) + 24(\$0.10)$$

97. $5n, 11d, 14q$

$$5n + 10d + 25q = 485$$

$$5d + 10n + 25q = 455$$

$$q = d + 3$$

(For an explanation of the second equation in 97 see the note above about the solution of problem 85.)

98. $188p, 115n, 230d, 235q$

$$p + 5n + 10d + 25q = 8938$$

$$q = d + 5$$

$$d = 2n$$

$$p = n + 73$$

99. a. $8n, 8q$

$$2n(5) + \frac{1}{2}q(25) = 5n + 25q - 60$$

$$n + q = 16$$

b. \$2.40.

$$8(\$0.05) + 8(\$0.25)$$

c. $3n, 6q$

$$5n + 25q = 165$$

$$2(5n) + \frac{1}{2}(25q) = 165 - 60$$

100. a. $30d, 40q$

$$\frac{3}{2}q + \frac{1}{3}d = q + d$$