


52. **BICYCLE COSTS** You want to buy a bicycle that costs \$360. In order to pay for the bicycle, you save \$30 per week. How many weeks will it take to save enough money to buy the bicycle? (p. 34)
53. **CHARITABLE DONATIONS** The table below shows the amounts of money (in millions of dollars) received by a charitable organization during the first 6 years of its existence. Approximate the best-fitting line for the data. Then use the best-fitting line to predict the amount of money the organization will receive in the eighth year of its existence. (p. 113)

Year	1	2	3	4	5	6
Donations (millions of dollars)	1.71	2.3	2.78	3.22	3.69	4.28

54. **ICE SHOW** The attendance at an ice show was 9800 people. The tickets for the ice show were \$35 for lower-level seats and \$25 for upper-level seats. The total income from ticket sales was \$280,000. Use a linear system to find the numbers of lower-level and upper-level tickets sold for the ice show. (p. 160)
55. **CONCERT TICKETS** Tickets to a school's band concert are \$4 for students, \$8 for adults, and \$6 for senior citizens. At Friday night's concert, there were 140 students, 170 adults, and 55 senior citizens in attendance. At Saturday night's concert, there were 126 students, 188 adults, and 64 senior citizens in attendance. Organize this information using matrices. Then use matrix multiplication to find the income from ticket sales for Friday and Saturday nights' concerts. (p. 195)
56. **PHYSICAL SCIENCE** While standing at the edge of a cliff, you drop a rock from a height of 85 feet above the ground. Write an equation giving the height  $h$  (in feet) of the rock above the ground after  $t$  seconds. How long does it take for the rock to hit the ground? (p. 266)
57. **BASEBALL** Three points on the parabola formed by throwing a baseball are (0, 6), (20, 56), and (36, 24). Write a quadratic function that models the baseball's path. (p. 309)
58. **MANUFACTURING** At a factory, molten plastic is poured into molds to make toy blocks. Each mold is a rectangular prism with a height that is 3 inches greater than the length of each side of the square base. A machine pours 200 cubic inches of liquid plastic into each mold. What are the dimensions of a mold? (p. 370)
59. **PROFIT** Your friend starts a housekeeping business. The table below shows the profit (in dollars) of the business during the first 6 months of its existence. Use a graphing calculator to find a polynomial model for the data. Predict the profit in the ninth month. (p. 393)

Month	1	2	3	4	5	6
Profit (dollars)	2	4	18	50	106	192

60.  **GEOMETRY** You have a beach ball that has a volume of approximately 7240 cubic inches. Find the radius of the beach ball. (*Hint:* Use the formula  $V = \frac{4}{3}\pi r^3$  for the volume of a sphere.) (p. 414)