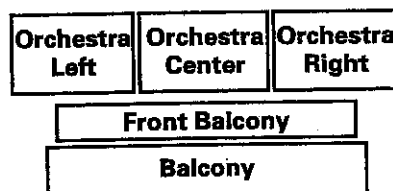


25. **Amusement Park** A group of 42 people go to an amusement park. The admission fee for adults is \$16. The admission fee for children is \$12. The group spent \$568 to get into the park. How many adults and how many children were in the group? Use the verbal model to write and solve a system of linear equations.

16. **Ballet Performance** A ballet company says that 540 tickets have been sold for its upcoming performance of *Swan Lake*. Tickets for the Orchestra Center and Front Balcony seats are \$56. Tickets for the Left and Right Orchestra and Balcony seats are \$38. The company has sold \$24,120 in tickets. How many \$56 and \$38 seats were sold?



Break-Even Analysis In Exercises 17–20, use the following information.

You purchase a skateboard shop for \$110,000. You estimate that monthly costs will be \$3800. The monthly revenue is expected to be \$5600.

17. Let R represent the revenue you bring in during the first t months. Write a linear model for R .

18. Let C represent your costs, including the purchase price, during the first t months. Write a linear model for C .

19. Graph the revenue and cost equations on the same coordinate plane.

20. How many months will it take until revenue and costs are equal (the “break-even point”)?

28. **Band Competition** The band boosters are organizing a trip to a national competition for the 226-member marching band. A bus will hold 70 students and their instruments. A van will hold 8 students and their instruments. A bus costs \$280 to rent for the trip. A van costs \$70 to rent for the trip. The boosters have \$980 to use for transportation. Use the verbal model below to write a system of equations whose solution is how many buses and vans should be rented. Solve the system.

27. **Test Questions** A history test is to have 20 questions. The teacher uses multiple choice and essay questions. The multiple choice questions are worth 4 points each. The essay questions are worth 8 points each. The test has a total of 100 points. Write a system of equations to determine how many of each type of question appears on the exam.

22. **Labor Force** From 1840 to 1990 the percent of the labor force in farming and non-farming occupations can be modeled by the following equations where t is the number of years since 1840.

$$y = -0.48t + 67.2 \quad \text{farming occupations}$$

$$y = 0.48t + 32.9 \quad \text{nonfarming occupations}$$

In what year was the labor force split equally into farming and non-farming occupations? Round your answer to the nearest year.