

Lesson #16 C: Understanding and Solving Systems of Equations-Applications of Linear Systems of Equations
(Reference: Lesson #55, #59 & #63 in book)**Problem**

- 1. For each of the following application word problems, please create two equations from the given information and then solve the system of equations using the method of your choice. (SHOW ALL OF YOUR WORK.)**
 1. The admission fee at a small fair is \$1.50 for children and \$4.00 for adults. On a certain day, 2200 people enter the fair and \$5050 is collected. How many children and how many adults attended.
 2. A landscaping company placed two orders with a nursery. The first order was for 13 bushes and 4 trees, and totalled \$487. The second order was for 6 bushes and 2 trees, and totalled \$232. The bills do not list the per-item price. What were the costs of one bush and of one tree?
 3. A heat-loss survey by an electric company indicated that a wall of a house containing 40 square feet of glass and 60 square feet of plaster lost 1920 BTU's of heat. A second wall containing 10 square feet of glass and 100 square feet of plaster lost 1160 BTU's of heat. Determine the heat lost per square foot for glass and for the plaster.
 4. Your grandmother needs your help. She has \$50,000 to invest. Part of this money is to be invested in noninsured bonds paying 15% annual interest. The rest of this money is to be invested in a government-insured certificate of deposit paying 7% annual interest. She told you that she requires \$6000 per year in extra income from both of these investments. How much money should be placed in each investment?
 5. A manufacturer produces a standard model and a deluxe model of a 25-inch television set. The standard model requires 12 hours of labor to produce, and the deluxe model requires 18 hours. The company has 360 hours of labor available per week. The plant's capacity is a total of 25 sets per week. If all the available time and capacity are to be used, how many of each type of set should be produced?
 6. Brenda's school is selling tickets to a spring musical. On the first day of ticket sales the school sold 3 senior citizen tickets and 9 child tickets for a total of \$75. The school took in \$67 on the second day by selling 8 senior citizen tickets and 5 child tickets. What is the price each of each senior ticket and each child ticket?