

Lesson #16-Understanding and Solving Systems of Equation-Application 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. A school play charged adults \$8 and students \$5 for tickets. There were 75 people who attended the play. The box office collected \$444. How many adults and how many students attended the play?
 2. Carlos has 32 Buffalo nickels, some with dates and some without dates. Buffalo nickels without dates are worth \$0.15, and dated Buffalo nickels are worth \$0.75. If Carlos's collection of Buffalo nickels is worth \$10.80, how many of the coins have dates on them?
 3. The cost of a cell phone bill includes the monthly fee plus the charge per minute for every minute over 500 minutes per month. The charge for 1,000 minutes is \$80. The charge for 1850 minutes is \$131. How much is the monthly fee and how much is the charge per minute?
 4. For the musical production of The Wizard of Oz playing at the Ford Center in Chicago, orchestra (main floor) seats cost \$148, while the best balcony tickets cost \$65. Suppose that the members of a club spent a total of \$2,614 for 30 tickets to the musical. How many tickets of each kind did they buy?
 5. The senior classes at High School A and High School B planned separate trips to New York City. The senior class at High School A rented and filled 1 van and 6 buses with 372 students. High School B rented and filled 4 vans and 12 buses with 780 students. Each van and each bus carried the same number of students. How many students can a van carry? How many students can a bus carry?
 6. Matt and Mandi are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of \$203. Mandi sold 11 small boxes of oranges and 11 large boxes of oranges for a total of \$220. Find the cost each of one small box of oranges and one large box of oranges.
 7. Jill has \$20 in her savings account and plans to deposit \$5 each week. Jose has \$5 in his account and plans to deposit \$10 each week. After how many weeks will they have the same amount of money in their accounts? What is that amount?
 8. Beau and Celine decide to rent bikes. There are two shops from which to choose. Rent-a-Bike charges \$10 per hour per bike. Bike-o-Rama charges only \$4 per hour per bike, but with a deposit of \$15 per bike. At what number of hours will both shops charge the same amount? What is that amount?