

## **College Algebra: Applications from Chapter 2:**

**Directions:** Use the four step process to solve the following problem, carefully identifying all unknowns and checking your solution. These four steps will be required on our first exam.

- 1.** The length of a rectangle is 3 cm less than twice the width. If the perimeter of the rectangle is 110.4 cm, set up the equations needed to determine the length and width of the rectangle.
- 2.** A 20% solution and a 70% solution of sulfuric acid are mixed to get 90 milliliters of a 50% solution. How many milliliters of each must be mixed.
- 3.** It takes an airplane, traveling against a 50 mph wind at a constant speed, 2.5 hours to fly from Austin to Dallas. The return trip, with the 50 mph wind at a constant speed takes 1.5 hours. Determine the speed of the plane in still air.
- 4.** Jennifer has \$20,000 to invest and she decides on two accounts, a money market account that pays 3.5%, and a treasury account that pays 4.8%, all at simple interest. She wants the total interest on the accounts to be \$853.40. How much should she invest in each account?
- 5.** Jose wants 8 pounds of a dried fruit mixture that he can sell for \$3.75 per pound. If he has dried peaches that cost \$4.50 per pound and dried apples that cost \$3.25 per pound, how much of each should he use?
- 6.** Two angles are supplementary. One angle is  $24^\circ$  less than twice the other. Find the angles. (Hint: supplementary angles have a sum of  $180^\circ$ .)
- 7.** A digital data circuit can transmit a particular set of data in 4 sec. An analog phone circuit can transmit the same data in 20 sec. How long would it take to transmit the data if both circuits were working together?