

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° less than twice the other. Find the angles. (Hint: supplementary angles have a sum of 180° .)
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?