1. Thirty liters of a 50% alcohol solution are to be made by mixing a 70% alcohol solution and a 20% alcohol solution. How many liters of each solution should be used?

2. Max, the manager of *The Coffee Cup*, sells "Morning Blend" coffee for $6.40 per pound. He makes "Morning Blend" by combining French Roast coffee that sells for $5.50 per pound with Kona coffee that sells for $7 per pound. How much of each type of coffee does Max use when he makes ten pounds of "Morning Blend"?

3. A grocer sells Brazilian coffee for $5.00 per pound and Colombian coffee for $8.50 per pound. How many pounds of each coffee should be combined to create 50 pounds of a blend that (s)he can sell for $7.10 per pound?

4. Two professors, one driving and the other taking an express train, leave cities 260 miles apart and travel to a city between them to attend a Mathematics conference. If the average speed of the train is 50 miles per hour greater than the average speed of the other professor's car during their two-hour trip, what are the average speeds of the train and the car?

5. Two trains leave towns 192 km apart, traveling toward each other on parallel tracks. One train travels 40 km/hr faster than the other. What is the speed of each train if the trains pass each other after two hours?

6. There are three popular varieties of milk available today, whole milk with 4.5% butterfat and two low-fat milks, one that has 2% butterfat and the other that has 1% butterfat. How many gallons of whole milk and 1% low-fat milk must be mixed in order to make 210 gallons of 2% low-fat milk?

7. 575 people attended a charity ball game paying $5 for adult tickets and $3 for children's tickets. How many adults and how many children attended the game if the charity earned $2575 from ticket sales?

8. At *The Nut House*, cashews cost $4.40 per pound and peanuts cost $1.20 per pound. If you want to spend $6, before tax, for exactly 3 pounds of nuts, how many pounds of each kind of nut should you buy?

9. How many grams of a 50% silver alloy should be mixed with a 75% silver alloy to obtain 40 grams of a 60% silver alloy?

10. Wanda, the manager of the Java Hut, mixes French Roast coffee that sells for $7.05 per pound and Ethiopian coffee that sells for $7.35 per pound with twenty pounds of Kona Kai Fancy coffee that sells for $17.55 per pound to make a Kona Blend that sells for $13.11 per pound. How many pounds of French Roast coffee and Ethiopian coffee does Wanda use to make the blend if she uses one more pound of French Roast coffee than she does Ethiopian coffee?