Name:_____ Date:_____

Conversions and Dimensional Analysis Practice

1. You just got a new job supervising the Yoplait yogurt factory. Your job is to purchase product to make sure each tub of yogurt is filled properly and for the least amount of money. The first thing you notice is that you need to order yogurt from the manufacturer. Each tub of yogurt is a half-cup but you can only order in gallons. How many gallons are in a tub?

2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon

2. The machine that fills the yogurt tubs runs for 10 hours a day for 5 days a week. How many hours does it run in a given week?

3. If the machine can fill 1,600 tubs an hour, how many tubs will it fill in a week?

4. So if you know how many tubs it can fill in a week, how many gallons of yogurt do you need to order from the manufacturer to make sure you fill exactly enough yogurt tubs for the week?

5. A gallon of yogurt from the manufacturer costs $24. How much will you spend on yogurt?

6. How much would that be for each tub of yogurt?

7. How much should you charge for a tub of yogurt to make sure that you make a profit?

8. Dr. Langstrom is participating in Doctors Without Borders, an organization that allows for doctors to go into third world countries to help in medical care for those who otherwise could not get it. Unfortunately due to airline restrictions he cannot bring over as much medicine as he would like. The airline only let him bring over 8 L of penicillin. Each dosage of penicillin is 5 mL. How many doses will he be able to give out?

9. The first county that Dr. Langstrom visits is Ethiopia. As soon as he lands he gets in a jeep and they start driving to a community where a young child needs emergency surgery. The jeep is traveling at a rate of 89 kM/hour. Dr. Langstrom wants to know what is the speed of the jeep in miles per hour? (1 km = .62 miles)

10. Dr. Langstrom is worried that he won't get there in time. If the child is 80 miles away how many minutes will it take to get to the child?

11. Dr. Langstrom helps the local nurses out by showing them how they can store clean antiseptic in containers to help prevent infection. Each container holds 15 dm^3 of antiseptic. Dr. Langstrom gave them 10 gallons. How many containers can they fill? (1 dm^3 = .264 gallon)