Name: _____   Section: _____

Dimensional Analysis Practice Problems

Directions: Using the provided conversion factors/relationships (if necessary), complete all of the follow problems. All work should be done on a separate sheet of paper. **YOU MUST SHOW YOUR WORK TO GET CREDIT!**

Conversion Factors/Relationships

Distance/Length	Mass	Volume
12 inches = 1 foot	16 ounces = 1 pound	1.06 quarts = 1 liter
3 feet = 1 yard	2,000 pounds = 1 ton	1 gallon = 3.78 liters
1,760 yards = 1 mile	1 Newton = 100 grams	4 quarts = 1 gallon
1 mile = 1.61 kilometer	2.20 pounds = 1 kilogram	2 pints = 1 quart
1 inch = 2.54 centimeters	1 pound = 454 grams	42 gallons = 1 barrel
10 millimeters = 1 cm		1000 milliliters = 1 liter
100 centimeters = 1 meter		
1000 meters = 1 kilometer		

One Step Conversions (Use Conversion Factors/Relationships)

1. Convert 6.85 quarts to liters
2. Convert 9.85 L to gallons
3. How many centimeters are in 100 inches?
4. How many miles are in 25 km?
5. The moon is 238,700 miles from the earth. What is the distance in kilometers?

Multiple Step Conversions (Use Multiple Conversion Factors/Relationships)

6. Convert 12 feet to centimeters
7. If a person has a mass of 60 kilograms, what is his mass in tons?
8. A can of soda has a volume of 355 milliliters. What is the volume in quarts?
9. A small pizza has a diameter of 9 inches. What is the length in millimeters?
10. How many Newtons are in 135 pounds?
11. If it took 5 hours to travel to Massachusetts, how many seconds would it take?
12. A 5 K race is equal to 3.10 miles. How many centimeters are in a 5 K race?
13. Convert 33 miles/hour to meters/minute*
14. At a speed of 35 mi/hr, how many centimeters do you travel per second?*
15. A train travels at a speed of 85 mi/hr. How many hours does it take to travel 17,000ft?*

*An asterisk (*) indicates the problem is challenging. Please attempt these problems and provide the minimum amount of work.*