

CHEMISTRY**DIMENSIONAL ANALYSIS PRACTICE I**

[Show your work when appropriate & place your answer in the blank supplied]

_____ 1. What are the correct units for the answer to a problem if the following series of conversion factor units are used?

quark	passel ²	goober	parsec	speck
goober	speck	passel	quark ²	passel

_____ 2. Evaluate the following:

$$\frac{(6.02 \times 10^{23}) (9.11 \times 10^{-31}) (5.98 \times 10^{24}) (3.82 \times 10^8)}{(3.92 \times 10^{-16}) (3 \times 10^8) (8.99 \times 10^{16}) (1.99 \times 10^{30})}$$

_____ 3. Given the following equivalents, convert 1 fizzle to frizzles.

3 swizzles	= 7 twizzles
1 fizzle	= 2 drizzles
3 twizzles	= 14 sizzles
1 swizzle	= 22 frizzles
8 drizzles	= 5 sizzles

_____ 4. Jules Verne wrote a book called *Twenty Thousand Leagues Under the Sea*. Using the conversion factors listed below, convert 20,000 leagues to inches.

12 in	= 1 ft
3 ft	= 1 yd
1 fathom	= 2 yards
1 statute mile	= 5280 ft
1 nautical mile	= 6080 ft
1 league	= 3 nautical miles

Directions(5-8): Use your table of conversion factors to make the following conversions:

_____ 5. Convert 6.35 miles to kilometers.

_____ 6. Convert 60 inches to meters.

_____ 7. Convert 60 mi/hr to in/min

_____ 8. At \$1.35 per gallon, how much will it cost to buy 225 liters of Amoco Ultimate gasoline?

_____ 9. Calculate the density of a sample from this data:

Mass of dry graduated cylinder	20.04 g
Mass of cylinder and sample liquid	26.52 g
Volume of sample liquid	9.0 cm ³

_____ 10. 50 mL of a liquid (density = 0.75 g/mL) is added to a graduated cylinder that has a mass of 85.25 g. What is the mass of the cylinder plus the liquid?