

**Dimensional Analysis**  
**CHEMISTRY 110**

Name \_\_\_\_\_  
last first

**Set-ups must be shown where applicable.**

*Hint: Work the problems assigned in the text first, many of these problems are similar to the homework problems. Remember : Answers to the problems in the text are in back of the text book*

1] Perform the following conversions:

*[Remember sig. figs. must be correct!!!]*

a.  $4.52 \times 10^{-6}$  yards to cm

Answer \_\_\_\_\_

b. 19.5  $\mu$ sec to csec

Answer \_\_\_\_\_

c. 6001  $\text{cm}^3$  to cubic millimeters

Answer \_\_\_\_\_

d.  $8.2 \times 10^{12}$  nm to miles

Answer \_\_\_\_\_

e. 745.6 mi/hour to in/sec

Answer \_\_\_\_\_

f. 55 kL to mL

Answer \_\_\_\_\_

2] Liquid sodium metal has a density of  $0.93 \text{ g/cm}^3$ . How many pounds of liquid sodium are needed to fill a container whose capacity is 15.0 L?

Answer \_\_\_\_\_

3] A typical ice cube from the refrigerator measures 4.0 cm x 3.5 cm x 3.3 cm and weighs 42.4 grams. Calculate the density of the ice cube.

Answer \_\_\_\_\_

4] A "track star" runs the 100.0 yd dash in 10.27 sec. What would be his time, **in seconds**, for a 100.0 m run if he ran it at the **same rate**?

Answer \_\_\_\_\_

5] 92.53 g of lead ( $\text{density}_{\text{lead}} = 11.34 \text{ g/cm}^3$ ) occupies the same volume as 64.2 g of iron  
a. What is that volume?

Answer \_\_\_\_\_

b. What is the density of iron?

Answer \_\_\_\_\_

c. Would one Kg of lead occupy more or less volume than one Kg of iron?

Answer \_\_\_\_\_

6] Convert  $99.0^\circ \text{C}$  to Kelvin

Answer \_\_\_\_\_