

Problem Set #2 Worksheet
CHEM 210 • Fall 2009

Name: _____ Section: _____

Directions: Answer the assigned book problems and the problems on this worksheet. Express the answers to the correct number of significant figures. Show all work to receive credit.

Silberberg, 5th ed. End-of-Chapter Book Problems (REQUIRED):

Chapter 1: 31, 41, 43b, 44 (*be sure to record volumes to the correct # of sig. fig.*), 48, 59, 77

Chapter 3: 13b, 136cd (*originally assigned with PS#1*)

Worksheet Problems (REQUIRED):

1. Express the following numbers in proper scientific notation.

A) 0.0038090

B) 3809000.00

2. Express the answers to the following problems in scientific notation with the correct number of sig figs:

A) 6.000×40.0000

C) $\frac{1.788 \times 10^{12}}{620 + 850}$

B) $120.44 + 6.7$

D) $(8.000 \times 10^{15}) + (7.28 \times 10^{13})$

3. Carry out the following conversions by ***DIMENSIONAL ANALYSIS***. (*Use the back cover of the book and your notes for some conversion factors.*)

A) $5.67 \times 10^{12} \text{ cg} \rightarrow \text{kg}$

B) How many ***nitrogen atoms*** are in 3.44 moles of $\text{Al}(\text{NO}_3)_3$

#3 (continued)

C) $9.225 \times 10^{17} \text{ ng} \rightarrow \text{kg}$

D) The pressure of a car tire is 32 lbs/in^2 . Convert this to g/cm^2 ?

E) $9.28 \text{ }\mu\text{g}$ (micrograms) aluminum \rightarrow atoms

4. How many moles of iron metal are in a block of iron that measures $4.00 \text{ cm} \times 4.00 \text{ cm} \times 12.00 \text{ cm}$?