Physics Name:

Homework Set - Intro. to Physics/Measurement

Reading:

Chapter 1, sections 1-4, pages 1-8

Questions & Problems:

Questions: 1, (also see reverse side)
Problems: 1-5,7,9,11-15,51

FOR FULL CREDIT:

- When answering questions write answers in ***complete sentences***.
- When solving problems draw a picture (if needed), ***show all work*** step-by-step, circle or box all answers.
- Please write on only the front side of the page.

SAMPLE PROBLEM:

Problem: find the Volume in cubic meters of a sphere with radius 12.0 inches.

1. $0.119\ m^3$

$$\frac{12.0in}{1} \cdot \frac{2.54cm}{1\ in} \cdot \frac{1m}{100cm} = 0.3048\ m$$

$V = 4/3\ r^3$
$V = 4/3\ (0.3048)^3$
$V = 0.1186$

SAMPLE QUESTION:

Question: Why is the sky blue?

The sky appears blue because of the effects of scattering. Blue light is better scattered by the atmosphere than red light is, giving a general perception of bluish tint to the sky.

(SEE REVERSE)

Outlines		5
Questions		11
Problems		14
TOTAL		**30**

Supplementary Questions:

2. Explain--and show graphically--the difference between an inverse and a direct proportion.

3. Explain the difference between *accuracy* and *precision* with words and a diagram.

4. Describe--in your own words--how to perform an order-of-magnitude approximation.

5. Does *uncertainty* increase, decrease, or remain the same when measured quantities are multiplied or divided. Explain.

6. What is the purpose of following the rules for *significant figures*. Use the example below to explain.

$$\begin{array}{r} 21.2 \\ \times\ 7.33 \\ \hline 155.396 \end{array}$$

7. What is the metric prefix for million? millionth?

8. What is the purpose of performing a *dimensional analysis*?