

NAME \_\_\_\_\_

CHEM1301/ Summer 2019/ Homework 1

DUE: 7/9/2019

1. I want to know your motivation for being here. You don't have to write a novel here, but give it some thought. I want to know (Really, I want you to put into words): what is your main reason for being in this class? What degree are you seeking, and where will you go once that degree is in hand? Who or what is your motivation for succeeding?

2. Classify each statement below as a theory, a law, or an observation:

\_\_\_\_\_ a. Matter is conserved in a chemical reaction.

\_\_\_\_\_ b. When tin is burned in a closed container, the sum of the masses of the container and its contents do not change.

\_\_\_\_\_ c. Matter is made of atoms.

\_\_\_\_\_ d. For any sample of gas, the pressure of the sample increases when the temperature of the gas increases. (This is true only as long as the volume of the sample is held constant.)

\_\_\_\_\_ e. A gas is composed of small particles in motion. They have lots of space between them allowing you to compress them closer together.

3. In your words, define the following terms:

a. THEORY

b. LAW

c. HYPOTHESIS

d. OBSERVATION

4. Fill in the table below by writing the following numbers in scientific notation:

<b>Standard Form</b>	<b>Scientific Notation</b>
12,005,300,000	
0.00006257	
0.00150062	
1,000	
1,000.068	
9,054,875	
42.14	
0.00000000000845	
106.400	
846,900,007,000,000.00	

1. Fill in the table below by writing the following numbers in standard decimal form:

<b>Scientific Notation</b>	<b>Standard Form</b>
$1.2008 \times 10^{-4}$	
$1.2008 \times 10^4$	
$6.0090 \times 10^8$	
$5.236 \times 10^{-2}$	
$4.628 \times 10^{-10}$	
$9.000 \times 10^5$	
$9.621 \times 10^{-9}$	
$2.700 \times 10^1$	
$1.008 \times 10^2$	
$8.465 \times 10^9$	