Homework #1
1/30/2016
Name: Scott Beaver, PhD

1. Print this homework sheet.

- Record your work and answers for the below problems in the spaces provided.
- Write out the textbook problem solutions on additional pages (see the last problem on page 4).
- Always put your name on all pages.
- Staple or bind this print-out and the textbook problems into a single packet.
- Submit it in at the beginning of the second class, 2/6/2016.

2. Read the syllabus. When is the first quiz for Chem30A?

3. Which states of matter have molecules/particles that are physically touching each other? liquid, solid — "condensed states"

(Gas, with particles not touching, is an "expanded state.")

4. Describe the following as an element, a compound, a homogenous mixture, or a heterogeneous mixture:

a) a pure silver ring — element – Ag

b) pure water — compound – H_2O

c) sugar water — homogeneous mixture

d) pure magnesium oxide (MgO) — compound

e) air, containing O_2 and N_2 — homogeneous mixture

f) soil — heterogeneous mixture

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5. Provide names for the following elements. Spelling counts!

Mg	magnesium	K	potassium
Br	bromine	I	iodine
Ag	silver	Au	gold
Hg	mercury	Pb	lead
Cd	cadmium	Sn	tin
F	fluorine	Fe	iron

6. List 2 diatomic elements. Give the name and formula for each.

Cl_2 – chlorine
Br_2 – bromine
I_2 – iodine
F_2 – fluorine
H_2 – hydrogen
O_2 – oxygen
N_2 – nitrogen

7. List 3 properties of metals, and 3 properties of nonmetals.

metals
solid
conductive
malleable

nonmetals
not solid
insulating
brittle

8. What is the difference between a chemical and physical change? Is an egg cooking a physical or chemical change? Explain in 1-3 sentences.

chemical change involve rearrangement of atoms/elements to form new substances. Physical change does not alter chemistry, such as a change of state.
egg cooking = chemical change – protein molecules altered, different physical properties

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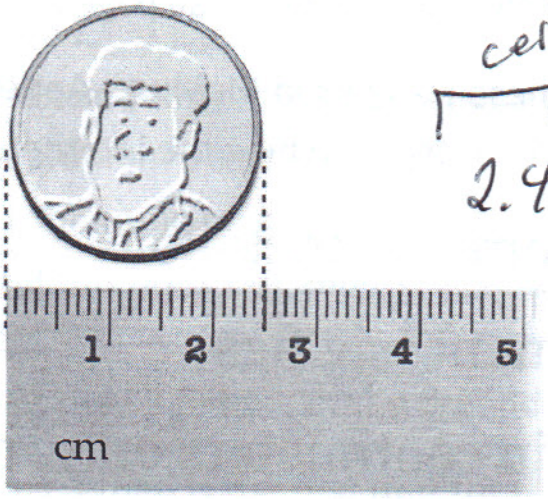
9. Provide a measurement for the coin (below figure) with the correct number of significant figures.



certain # to tenths place

3 s.f. overall

2.49 cm

≡

cm certain / guessed digit at ±0.01

10. Count the significant figures, and covert to scientific notation.

	# sig figs	scientific notation
892	3	8.92×10^{2}
892,000	3	8.92×10^{5}
0.00892	3	8.92×10^{-3}
0.100	3	~~1.00×10~~ 1.00×10^{-1}
0.00100	3	~~1.00~~ 1.00×10^{-3}
100.000	6	1.00000×10^{2}
8008.0	5	8.0080×10^{3}

leading zeros