WS 6.6 Quiz Review!

1. Fill in the missing name or formula for the following compounds

Rb_2S _____ $Sn(CO_3)_2$_____

Cl_2O _____ Sn_3P_2_____

SF_2_____ SnS_____

$MgCl_2$_____ CO_____

ferric chromate_____   dinitrogen tetroxide_____

potassium phosphate_____   nitrogen dioxide_____

iron (II) carbonate _____   arsenic trifluoride_____

lithium carbonate_____   chromium (III) phosphide_____

zinc hydroxide_____ NCl_3_____

Magnesium phosphate_____ AlF_3_____

Lead (II) sulfite_____ Ag_2CrO_4_____

Copper (I) sulfite_____ IF_5_____

2a. For each element in the six compounds below, indicate whether the element must gain, lose, or share electrons in order to form the compound.

Rb_2S Li_2O Cl_2O SF_2 $MgCl_2$

b. What do metals typically do with their electrons when they form compounds?

c. What do nonmetals typically do with their electrons when they form compounds?

3. Thallium (Tl; element number 81) can form ions with a +1 charge and a +3 charge.

a.What is the charge on a Thallium atom? _____

b. How many protons and electrons does it (the atom) have? _____ p _____ e

c. How many protons and electrons are in a Thallium (III) ion? _____ p _____ e

d. Which of the Thallium ions (if any) have the same number of electrons as a noble gas?_____

e. Actinium is element # 89. Actinium _ion_ is not on your ion sheet.
How many protons and how many electrons would you predict to be in actinium _ion_? _____ p _____ e

f. Fill in the ion charges below _without looking at your ion sheet_ ! (A periodic table might be helpful!)

Ion Name:	Ion Formula (fill in the charge!)	Ion Name:	Ion Formula (fill in the charge!)
Sodium ion	Na	oxide ion	O
Sulfide ion	S	potassium ion	K
Aluminum ion	Al	calcium ion	Ca
phosphide ion	P	lead (II) ion	Pb
barium ion	Ba	manganese (IV) ion	Mn
iodide ion	I	Gold (III) ion	Au

g. What is the charge on.... a sodium atom?_____   a chlorine atom?_____   an aluminum atom?_____

4. Rewrite each number in scientific notation, so that it keeps the same number of significant figures as it started with.

0.00003460 _____   5580_____

50   _____   700_____

2460. _____   88888000_____

0.0009 _____   46.500_____

750.   _____   17_____

93.00 _____   .00040_____

75000 _____   610_____

0.14   _____   60000_____

5. Significant Figures!
Do each calculation, and report the answer to the correct number of significant figures.
Use scientific notation ONLY WHEN NECESSARY.

3.417 – 3.217   = _____

106.232 – 105.48   = _____

106.232 / 105.48   = _____

22.34 + 86.92   = _____

9999 / 3333   = _____

9999 – 3333   = _____

12222 / 3055.5   = _____

5.40 x 8.925   = _____

7.98 x 6.3   = _____

490 + 131   = _____

88.49 – 86.29   = _____

3.147 – 3.125   = _____

6.8 + 13.2   = _____

72.186 – 70.110   = _____

8800 / 44.0   = _____

0.0004 x 197   = _____

40.   x 200.   = _____

0.13 x 130   = _____

24.38 – 24.17   = _____

24.38 – 24.18   = _____

24.18 / 24.38   = _____

93.0 x 968.495   = _____

93 x 968.495   = _____

6. Conversions! (you will probably need some of the conversion factors given on WS 4.0 to do these.)
a. The top of a table has an area of 16200 square centimeters. Convert this into square feet.

b. Convert a speed of 444 meters per hour into centimeters per second.

c. Convert 343 deciseconds (ds) into microseconds (μs).

d. Convert from 4.38×10^{11} cm^3 into km^3.

e. Iron has a density of 7.86 g/cm^3. Convert this into pounds per cubic inch.

f. Convert 30. milliliters (mL) into liters.

g. Convert 0.00198 kilograms into milligrams.

h. Convert 1.67 nanograms (ng) into micrograms (μg).

i. A glacier is moving at a speed of 91 centimeters per day. Convert this speed into nanometers per second.

7. Write the symbol (for example, $^{24}Na^{+1}$) for:

a. An ion with 78 electrons, a mass of 202 amu, and 122 neutrons. _____

b. An ion with 36 electrons, a charge of -3, and 42 neutrons._____

c. An atom with 27 electrons and 33 neutrons. _____