

0. Use the rules you learned from your TA's about significant figures to determine the appropriately rounded solutions to the following arithmetic equations:

- a.  $0.4 + 0.44 + 0.444 =$                       b.  $27.55 - 14.545 =$   
c.  $3.65 \times 7.1 =$                                   d.  $131.78 \div 19.25 =$   
e.  $(16.5 + 0.47) \div 1.234 =$

1. In lecture, we introduced the ten prefixes used to denote the number of atoms of a particular element present in a binary compound. Using those, deduce the names of the compounds denoted in the following formulae. Note, you may need to refer to a list that gives the elements' names that correspond to the symbols given:

- a.  $B_2O_3$     b.  $C_3Br_8$   
c.  $SiSe_2$     d.  $SO_3$   
e.  $N_2Cl_4$     f.  $P_4O_{10}$

2. In this example, use the name of the binary compound to deduce the formulae that corresponds to the name. You may need to refer to a list that gives the elements' symbols that correspond to the given names:

- a. dinitrogen pentoxide                      b. iodine heptachloride  
c. sulfur hexafluoride                        d. tetraiodine nonoxide  
e. bromine monofluoride                      f. trihydrogen phosphide

3. Balance the following combustion reactions using the technique we introduced in lecture on Friday, Sept. 4:

- a.  $\underline{\hspace{1cm}} CH_4 + \underline{\hspace{1cm}} O_2 \rightarrow \underline{\hspace{1cm}} CO_2 + H_2O$   
b.  $\underline{\hspace{1cm}} C_2H_4 + \underline{\hspace{1cm}} O_2 \rightarrow \underline{\hspace{1cm}} CO_2 + H_2O$   
c.  $\underline{\hspace{1cm}} C_2H_6 + \underline{\hspace{1cm}} O_2 \rightarrow \underline{\hspace{1cm}} CO_2 + H_2O$