

- For each of the following, determine the correct number of significant figures each answer should be reported to. Try to figure out the answers without computing the numerical answers!
 - $6.42 \times 10^4 + 2.5 \times 10^3$
 - $\frac{2.00 \times 10^5}{4.0 \times 10^3}$
 - $\frac{9.284 - 4.81}{12 \times 1.13}$
 - How would the numerical answer for 1C change if you rounded after each mathematical step? Compute the expression rounding after each step and then by rounding only at the end.
- The speed of light is 299,792,458 m/s. Express the speed of light in feet per nanosecond (ft/ns). Then estimate how long it takes for light to travel from the lights above you to your eyes.

Note: 1 ft = 0.3048 m
- Write the chemical formula for each of the following compounds.
 - Silver(I) cyanide
 - Calcium hypochlorite
 - Potassium chlorate
 - Iron(III) nitrite
- Give the systematic name for each of the following compounds.
 - CaF_2
 - P_2O_5
 - Cu_2S
 - CuS
 - NH_4ClO

5. Complete the table below:

Symbol	$^{137}_{55}\text{Cs}^+$	$^{56}_{26}\text{Fe}^{3+}$	$^{17}_8\text{O}^{2-}$			
# Protons				30		40
# Neutrons				34	16	
# Electrons				28	18	36
Mass Number					32	90

6. An unknown ion has a total charge of 2+ and 27 electrons. Which ion might this be?

7. There are two stable isotopes of nitrogen: ^{14}N (14.00307 amu) and ^{15}N (15.00011 amu). If the average atomic mass of nitrogen is 14.00676 amu, what is the natural abundances of the two isotopes?