

1. (10 marks in total) For *two out of three* of the following questions, give a short answer in the space provided. **Clearly show which ones you want me to grade.** Show your reasoning and/or your work.

a. Estimate the daily volume of air you breathe. Show your work **IN DETAIL!!!**

b. Give the number of significant figures for each of the following clearly describing how you come to this answer. If you wanted to do an accurate calculation, which number would you use (give me your reasoning).

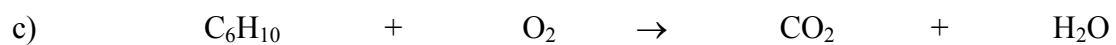
331,267 →

3.31×10^5 →

3×10^5 →

c. What factors contribute to Los Angeles having particularly high levels of pollution?

2. (15 marks in total) Balance each of the following reactions. Show your work!!!!



3. (15 marks in total) For each of the following molecules, determine the expected number of valence electrons, draw the Lewis structure, and check if your Lewis structure is correct.

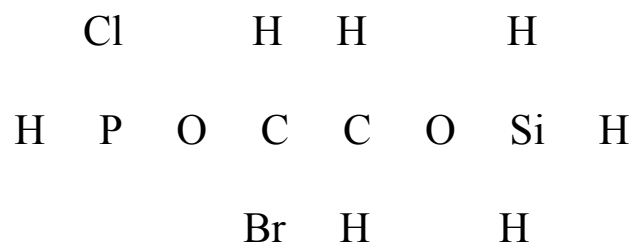
a)



b)



c)



4. (10 marks in total) For each of the following isotopes, give the total number of protons, neutrons, and electrons and then the number of valence electrons and core electrons. Show your work.



total number of neutrons =

total number of protons =

total number of electrons =

number of valence electrons =

number of core electrons =



total number of neutrons =

total number of protons =

total number of electrons =

number of valence electrons =

number of core electrons =