CHEM 130		
Quiz 3 – Sep	t. 16,	2011

Name		
		

Complete the following problems. You must show your work to receive full credit. Show your answers to the correct number of significant figures with the correct units.

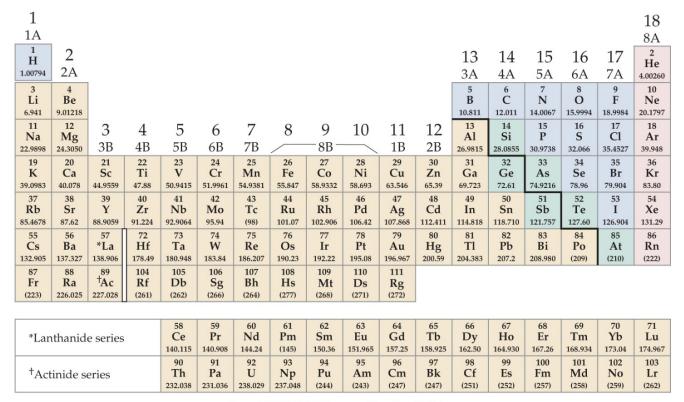
1. Chlorine exits as two isotopes: ³⁷Cl and ³⁵Cl. The atomic mass of chlorine from the periodic table is 35.453 amu. What fraction of all chlorine atoms has a mass of 35.453 amu? Justify your answer in at most three sentences.(9 pts.)

- 2. One common prescription medication for asthma is an inhaler containing albuterol, whose molecular formula is $C_{13}H_{21}NO_3$. Answer the following regarding albuterol. (8 pts.)
 - a. What is the mass percent of nitrogen in albuterol? (4 pts.)
 - b. If 100.0 doses of albuterol retail for \$85.00 and each dose contains 180 μ g of the active ingredient, what is the price of one mole of albuterol? (4 pts.)

3. Adenine, a component of nucleic acids, has a mass percent composition of 44.45% C, 3.73% H and 51.82% N. Its molecular mass is 135.14 grams per mole. What are the empirical and molecular formulas for adenine? (9 pts.)

Possibly Useful Information

% by mass = $\frac{\text{g component}}{100 \text{ g sample}}$	$N_A = 6.02 \times 10^{23}$	
Don't walk between parked carsor moving ones!	1 cm ³ = 1 mL 1000 cm ³ = 1 L	



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