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.
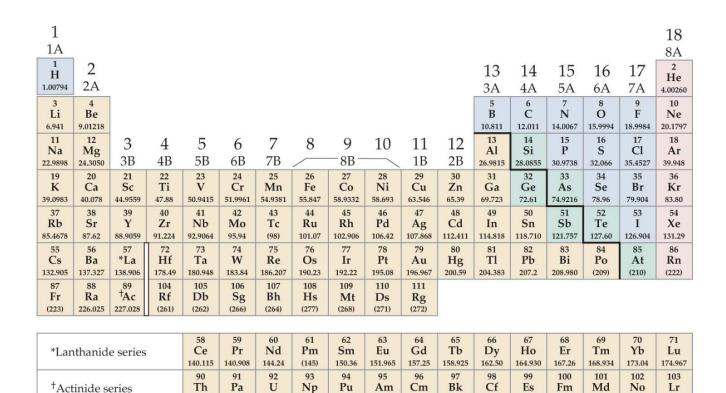
1. One prescription medication for asthma is an inhaler containing albuterol, whose molecular formula is $C_{13}H_{21}NO_3$. Over 18 million prescriptions for albuterol were filled in 2016, making it the third most prescribed drug in the US. Answer the following regarding albuterol.
    a. What is the mass percent of nitrogen in albuterol? (8 pts.)

    b. If 100.0 doses of albuterol retail for $85.00 and each dose contains 180 µg of the active ingredient, what is the price of one mole of albuterol? (8 pts.)

2. 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 = $\dfrac{\text{g component}}{\text{100 g sample}}$	$N_A = 6.02 \times 10^{23}$
Don't walk between parked cars… …or moving ones!	1 cm^3 = 1 mL 1000 cm^3 = 1 L

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