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.

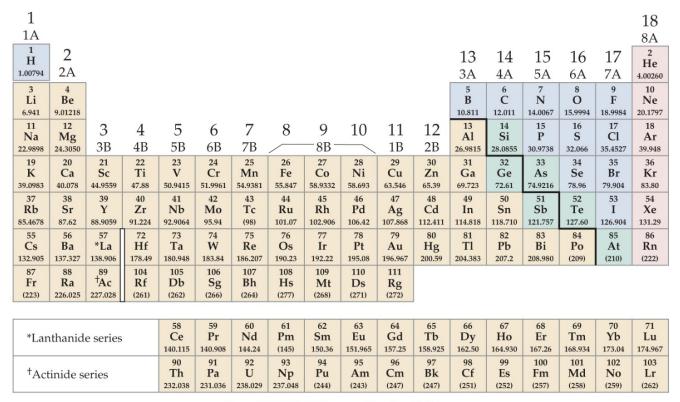
- 1. One common prescription medication for asthma is an inhaler containing albuterol, whose molecular formula is C<sub>13</sub>H<sub>21</sub>NO<sub>3</sub>. Answer the following regarding albuterol. (11 pts.)
  - a. What it the molar mass of albuterol? (3 pts)
  - b. What is the mass percent of nitrogen in albuterol? (3 pts.)
  - c. If 100 doses of albuterol retail for \$85.00 and each dose contains 180  $\mu g$  of the albuterol, what is the price of one mole of albuterol? (5 pts.)

- 2. Ion formation and ionic compounds: (6 points):
  - a. Bromine and calcium can react to form and ionic compound that contains only bromine calcium. Write the formula and name for this compound:
  - b. Chromium forms an ionic compound with sulfur with the formula Cr<sub>2</sub>S<sub>3</sub>. What is the charge on the chromium in this compound:
- 3. Complete the table below (8 points):

Name	Symbol	# Protons	# Neutrons	# Electrons
chlorine - 37		17		17
	<sup>31</sup> P			
		25	30	23

## **Possibly Useful Information**

% by mass = $\frac{\text{g component}}{100 \text{ g sample}}$	d = m/v	
Don't walk between parked carsor moving ones!	$1 \text{ cm}^3 = 1 \text{ mL}$ $1000 \text{ cm}^3 = 1 \text{ L}$	



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