CHEM-1105 ISOTOPES

1. Give the isotopic notation or nuclide symbol for an isotope that has an atomic number of 19 and mass number of 40.

2. An isotope of lithium has four neutrons in its nucleus. Give the isotopic or nuclide notation.

3. How many protons and electrons are in a cation formed by removing three electrons from a chromium atom.

4. By using a mass spectrometer, it was found that an atom of the isotope Br-79 has a mass 6.577 times as large as an atom of C-12. What is the atomic weight of the bromine isotope?

5. Lead has four naturally occurring isotopes. Calculate the atomic weight of lead from the following data.

   Pb-204 (1.480%, 203.9730 amu)
   Pb-206 (23.60%, 205.9745 amu)
   Pb-207 (22.60%, 206.9759 amu)
   Pb-208 (52.30%, 207.9766 amu)

6. Thallium has two naturally occurring isotopes: Tl-203, which has an atomic weight of 202.9723 amu; and Tl-205, which has an atomic weight of 204.9743 amu. Naturally occurring thalium has an atomic weight of 204.37 amu. Determine the percentage of Tl-203 and Tl-205 in the naturally occurring element.

7. Complete the following table:

Z	A	# of p^+	# of n^0	# of e^-	NUCLEAR CHARGE	ISOTOPIC NOTATION	NAME
						$^{23}_{11}Na$	
						$^{58}_{28}Ni^{2+}$	
	25		13	10			
	90			36	35		
29			34	28			