1. A 0.578 g sample of pure tin (Sn) is reacted with gaseous fluorine until the mass of the resulting compound is constant at a value of 0.944g. Determine the empirical formula of the tin fluoride formed from the mass data.
2. Determine the empirical formulas for compounds with the following percent compositions:
3. 15.8% carbon and 84.2% sulfur
4. 40.0% carbon, 6.7% hydrogen, and 53.3% oxygen
5. Determine the empirical and molecular formula for chrysotile asbestos. Chrysotile has the following percent composition: 28.03% Mg, 21.60% Si, 1.16% H, and 49.21% O. The molar mass for chrysotile is 520.8 g/mol.

**1. SnF4**

**2 a) CS2 1b) CH2O**

**3 Mg3Si2H3O8 (empirical formula), Mg6Si4H6O16 (molecular formula)**