WS 4.5.1　　Percent Composition

1. Determine (to 3 sig fig's) the % composition for **each** element in the following substances:

a) **FeO**

_____　　_____
　Fe　　　　　O

b) **Na₂CO₃**

_____　　_____　　_____
　Na　　　　　C　　　　　O

c) **Mg(NO₃)₂**

_____　　_____　　_____
　Mg　　　　　N　　　　　O

d) **C₄H₁₀**

_____　　_____
　C　　　　　H

e) **N₂**

_____
　N

f) **Ti(MnO₄)₂**

_____　　_____　　_____
　Ti　　　　　Mn　　　　　O

2. There are three types of iron ores in Missouri. Determine the % Fe in each.

Fe₂O₃	**Fe₃O₄**	**FeS₂**
% Fe= _____	% Fe= _____	% Fe= _____
name of ore:	name of ore:	name of ore:

IRO+**4:**　11.3　16.4　16.7　17.2　18.9　22.3　26.1　35.2
　　　　　　38.4　40.6　43.4　44.8　45.3　46.5　60.9　64.7　69.9　72.3　77.7　82.8　100

WS 4.5.2   Empirical Formula

1. A compound is 12.7% Al, 19.7% N, and 67.6% O. Determine its empirical formula.

Ans _____

2. A compound is 39.6% C, 7.7% H, and the rest O. Determine its empirical formula.

Ans _____

3. A compound is 23.3% Mg, 30.7% S, and 46.0% O by mass. Determine its empirical formula.

Ans _____

4a. A compound is 85.7% C and 14.3% H by mass. Determine its empirical formula.

Ans _____

4b. This substance's molecular weight is 84 g/mol. Determine the molecular formula.

Ans _____

5a. A compound is 30.4% N, and 69.6% O by mass. Determine its empirical formula.

Ans _____

5b. This substance's molecular weight is 92 g/mol. Determine the molecular formula.

Ans _____

6a. A compound is 12.1% C, 16.2% O, and the rest Cl by mass. Determine its empirical formula.

Ans _____

6b. This substance's molecular weight is 297 g/mol. Determine the molecular formula.

Ans _____

(IRO+16) CH_2, C_2H_9, C_2H_3, C_6H_{12}, C_6H_9, Al_2NO_4, Al_3NO_3, AlN_3O_9, CH_2O_2, $C_3H_7O_3$, C_2H_5O, MgS_3O_2, $MgSO_3$, Mg_2SO_2, NO_2, NO_3, N_2O_4, N_2O_6, N_2O_5, N_2O, $COCl$, C_2OCl_2, $COCl_2$, CO_3Cl_2, $C_3O_3Cl_6$