Mole Calculations Continued . . .

Name - _____

6.) Calculate the number of moles contained in the following.

a.) $10.6\ L$ of $SO_{2\ (g)}$ at STP

b.) $7.51 \times 10^{21}\ g\ molecules$ of HNO_3

c.) $425\ mg$ of $Ca(OH)_2$

d.) $4.25 \times 10^{12}\ g\ molecules$ of Fe_2O_3

e.) $0.950\ kg$ of NaOH

f.) $25.0\ mL$ of $N_{2\ (g)}$ at STP

g.) $5.50 \times 10^{25}\ g\ molecules$ of CCl_4

h.) $0.120\ L$ of $NO_{2\ (g)}$ at STP

7.) Calculate the volume of the following gases at STP.

a.) $0.235\ mol$ of $B_2H_{6\ (g)}$

b.) $9.36\ mol$ of $SiH_{4\ (g)}$

c.) $2.5 \times 10^3\ g\ mol$ of $C_2H_{6\ (g)}$

8.) Calculate the mass of each of the following.

a.) $0.125\ mol$ of $CO_{2\ (g)}$ at STP

b.) $5.48\ mol$ of $FeCl_{3\ (s)}$

c.) $6.54 \times 10^{-4}\ g\ mol$ of $HCN_{(g)}$ at STP

d.) $15.4\ mol$ of $Ni(OH)_{2\ (g)}$

9.) Calculate the mass of $1\ mol$ of each of the following.

a.) $Na_2B_4O_7 \cdot 10H_2O$

b.) My grandmother has a mass of $52\ kg$.

c.) A bismuth atom having a mass of $3.52 \times 10^{-22}\ g$.

d.) An electron having a mass of $9.1 \times 10^{-28}\ g$.

e.) $Cu_3(OH)_2(CO_3)_2$

f.) A book having a mass of $1.34\ kg$.

10.) An unknown gas sample contains only one of the compounds SO_3, CH_4, NF_3, or C_2H_2. If $1\ molecule$ of the gas has a mass of $1.18 \times 10^{-22}\ g$, which type of molecule is contained in the sample?

11a.) General Saunders "Kelowna Fried Chicken" features the Super Barrel, containing $2\ moles$ of chickens (deep fried). How many drumsticks are contained in the Super Barrel?

b.) How many drumsticks, wings and thighs are in the super Barrel all together?