Student Name:

Teacher Name:

Class Name/Subject: ENH Chemistry

Period:

Assignment Week #: 2

WS 1: Molar Mass WS

Find the molar masses (in g/mol) of the following compounds. Remember that all molar masses should be rounded to the hundredths place (two decimals).

_____1) Ca

_____2) NaBr

_____3) $PbSO_4$

_____4) Na_3PO_4

_____5) $(NH_4)_2CO_3$

_____6) $C_6H_{12}O_6$

_____7) $Fe_3(PO_4)_2$

_____8) $(NH_4)_2S$

_____9) $Zn(C_2H_3O_2)_2$

_____10) $CuSO_4 \cdot 5H_2O$

_____11) $Ba(OH)_2 \cdot 8H_2O$

WS 2: Stoich WS 0 (mole-mole)

Use the following balanced reaction for **all** problems in this section. Show your work using conversions.

$2\ C_4H_{10}(g) + 13\ O_2(g) \rightarrow 8\ CO_2(g) + 10\ H_2O(g)$ STP

1. How many moles of C_4H_{10} are burned if 20 moles of CO_2 gas are produced?

2. How many moles of O_2 gas are required to produce 815 mol of H_2O gas?

3. How many moles of H_2O gas are produced when 2025 moles of C_4H_{10} are burned?

4. How many moles of O_2 gas are required to produce 112.0 moles of CO_2 gas?

5. Butane (C_4H_{10}) is used for campers and trailers. If 60.0 moles of butane are burned by a stove in a camper, how many moles of oxygen are consumed?

6. How many moles of H_2O gas are produced when 1.0 moles of O_2 gas are consumed at STP?

7. If 850 mol of CO_2 gas are collected at STP conditions, how many moles of H_2O are produced?

8. 2.000 mol of butane (C_4H_{10}) are burned. How many moles of CO_2 gas are produced?

WS 3: Stoich WS 2

Show your work (conversions) for all stoichiometry problems.

For problems 1-4, use the equation

$$\_\_\_\_ H_2SO_{4(aq)} + \_\_\_\_ NaOH_{(aq)} \rightarrow \_\_\_\_ Na_2SO_{4(aq)} + \_\_\_\_ H_2O_{(l)}$$

1. Balance the equation.
2. How many moles of Na_2SO_4 can be made from 0.396 mol NaOH?

3. How many moles of Na_2SO_4 can be made from 1.04 g NaOH?

4. How many grams of H_2O is produced if 150 g of Na_2SO_4 is made?

For problems 5-8, use the equation

$$\_\_\_\_ H_2O_{(l)} \rightarrow \_\_\_\_ H_{2(g)} + \_\_\_\_ O_{2(g)} \qquad \text{at STP}$$

5. Balance the equation.
6. If 79 g of H_2 is produced, how many kilograms of O_2 are produced?

7. If 79 particles of H_2O reacts, how many particles of H_2 are made?

8. How many grams of H_2O are needed to make 0.462 mol of O_2?

For problems 9-12, use the equation

$$CuCl_{2(aq)} + H_{2(g)} \rightarrow 2HCl_{(aq)} + Cu_{(s)} \qquad \text{at STP}$$

9. How many mol of Cu can be made if 69.1 g of $CuCl_2$ are used?

10. What mass of H_2 is needed to make 0.500 mol of HCl?

11. If 810 molecules of H_2 are used, how many atoms of Cu are made?

12. How many g of HCl are produced if 7.23 g of Cu is made?