Chapter 12 WS

Name: _____

Mass & Volume to Mass Conversions **Period:** _____ **Date:** _____

Solve. Show ALL work and use correct significant figures and units in all of your steps.

1) For the reaction $Cl_2 + 2KBr \rightarrow 2KCl + Br_2$, how many grams of potassium chloride can be produced from 150 g of potassium bromide?

2) For the reaction $2Na + 2H_2O \rightarrow 2NaOH + H_2$, how many grams of hydrogen are produced if 40 g of water are available?

3) For the reaction $2Na + Cl_2 \rightarrow 2NaCl$, how many grams of sodium chloride can be produced from 250 g of chlorine gas?

4) For the reaction $SO_3 + H_2O \rightarrow H_2SO_4$, how many grams of sulfuric acid can be produced from 100 g of sulfur trioxide?

5) For the reaction $2Zn + O_2 \rightarrow 2ZnO$, how many grams of zinc oxide can be produced from 50 g of zinc?

6) Chlorine is produced by the reaction $2HCl(g) \rightarrow H_2(g) + Cl_2(g)$. How many grams of hydrochloric acid must be used to produce 7.5 L of chlorine gas?

7) Iron (III) oxide is produced by the reaction $4Fe + 3O_2 \rightarrow 2Fe_2O_3$. How many grams of iron (III) oxide can be produced from 12.5 L of O_2?

8) When carbon burns, carbon dioxide is produced in the reaction: $C + O_2 \rightarrow CO_2$. If 5 liters of carbon dioxide are produced, how many grams of carbon were used?

9) The combustion of ethane follows this reaction: $2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$. If 156.8 liters of oxygen are used, what mass of ethane was burned?

10) Photosynthesis takes carbon dioxide and water and converts it into glucose and oxygen: $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6H_2O$. If a plant takes in 12.5 liters of carbon dioxide, what mass of glucose can the plant produce?