STOICHIOMETRY WORKSHEET 1 (MASS-MASS)

1. Determine the mass of lithium hydroxide produced when 0.38 grams of lithium nitride reacts with water according to the following **unbalanced** chemical equation:

$$Li_3N(s) + H_2O(l) \rightarrow NH_3(g) + LiOH(aq)$$

2. What mass of sodium chloride is produced when chlorine gas reacts with 0.29 grams of sodium iodide? The **unbalanced** equation is given below:

NaI (s) +
$$Cl_2$$
 (g) \rightarrow NaCI (s) + l_2 (g)

3. Determine the mass of carbon dioxide produced when 0.85 grams of butane (C_4H_{10}) reacts with oxygen according to the following balanced chemical equation:

$$2 \; C_4 H_{10} \; (I) \; + \; 13 \; O_2 \; (g) \; \rightarrow \; 8 \; CO_2 \; (g) \; + \; 10 \; H_2 O \; (g)$$

4. Determine the mass of antimony produced when 0.46 grams of antimony (III) oxide reacts with carbon according to the following balanced equation:

$$Sb_2O_3\left(s\right) \; + \; 3\; C\; (s) \; \rightarrow \; 2\; Sb\; (s) \; + \; 3\; CO\; (g)$$

5.	Hydrogen peroxide $decomposes$ to produce oxygen gas and water. What mass of hydrogen peroxide (H_2O_2) must decompose to produce 0.77 grams of water?
6.	In the combustion of carbon monoxide, what mass of CO is required to produce 0.69 grams of carbon dioxide? The unbalanced equation is shown below: $CO\left(g\right) \ + \ O_{2}\left(g\right) \ \rightarrow \ CO_{2}\left(g\right)$
7.	Determine the mass of sodium nitrate produced when 0.73 grams of nickel (II) nitrate reacts with sodium hydroxide according to the following unbalanced chemical equation: $Ni(NO_3)_2 \ (aq) + \ NaOH \ (aq) \rightarrow \ Ni(OH)_2 \ (aq) + \ NaNO_3 \ (aq)$

8. Determine the mass of calcium hydroxide produced when calcium carbide (CaC₂) reacts with 0.64 grams of water according to the following balanced chemical equation:

$$CaC_2 \ (s) + \ 2 \ H_2O \ (I) \ \rightarrow \ Ca(OH)_2 \ (aq) + \ C_2H_2 \ (g)$$