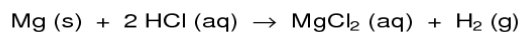# STOICHIOMETRY WORKSHEET (MOLE-MOLE)

1. Magnesium reacts with hydrochloric acid according to the following balanced chemical equation:

    $$Mg \ (s) \ + \ 2 \ HCl \ (aq) \ \rightarrow \ MgCl_2 \ (aq) \ + \ H_2 \ (g)$$

    If two moles of hydrochloric acid react with excess magnesium, how many moles of hydrogen gas will be produced?

2. Aluminum reacts with HCl to produce aluminum chloride and hydrogen gas. Write a balanced equation for the reaction and calculate the number of moles of HCl required to react with 0.87 moles of Al.

3. Glucose ($C_6H_{12}O_6$) combines with O_2 in the body to produce carbon dioxide and water. Write a balanced equation for this reaction. How many moles of O_2 are required to combine with 0.25 moles of glucose? How many moles of CO_2 and H_2O would be produced in this reaction?

4. Calcium carbonate combines with HCl to produce calcium chloride, water, and carbon dioxide gas. Write the balanced equation for this reaction. How many moles of HCl are required to react with 2.5 moles of calcium carbonate? How many moles of carbon dioxide would be produced?

5. Zinc reacts with sulfuric acid (H_2SO_4) to yield zinc sulfate and hydrogen gas. How many moles of hydrogen will be produced if 0.36 moles of zinc react with an equal amount of H_2SO_4?