

## Stoichiometry Ws # 1: Basic Stoichiometric Conversions

### MOLE TO MOLE CONVERSIONS

1. Iron III nitrate solution reacts with lithium hydroxide solution to produce solid iron III hydroxide and lithium nitrate solution.
  - A. Write a balanced equation.
  - B. How many moles of lithium nitrate are produced when 3 moles of iron III nitrate react?
  - C. How many moles of lithium hydroxide are needed to produce 6.3 moles of iron III hydroxide?

### MASS TO MOLE CONVERSIONS

2. Sodium reacts with chlorine gas to produce sodium chloride.
  - A. Write a balanced equation.
  - B. How many grams of chlorine gas are needed if 4.0 moles of sodium react?
  - C. How many grams of each reactant are needed to produce 2.0 moles of the product?

### MOLE TO MASS CONVERSIONS

3. Lead II nitrate and sodium iodide react to form sodium nitrate and lead II iodide.
  - A. Which product is the precipitate?
  - B. Write a balanced equation.
  - C. How many moles of sodium iodide react with 250. grams of lead II nitrate?
  - D. If 140. grams of lead II iodide are produced, how many moles of sodium iodide were used?

### MASS TO MASS CONVERSIONS

4. Solid Magnesium oxide reacts with liquid water to produce magnesium hydroxide.
- Write a balanced equation for the reaction.
  - How many grams of  $MgO$  are needed to produce 264. grams of  $Mg(OH)_2$ ?
  - How many grams of magnesium hydroxide are produced when 57.0 grams of water are used?
  - How many grams of water are needed to react completely with 10.0 grams of magnesium oxide?

### YOU CHOOSE THE TYPE OF CONVERSION

5. Aqueous solutions of Barium Nitrate and Ammonium Carbonate are combined to produce solid Barium Carbonate and Ammonium Nitrate solution.
- Write the Balanced equation.
  - How many grams of barium nitrate are needed to react with 220. grams of ammonium carbonate?
  - How many moles of ammonium nitrate will be produced from 110. grams of ammonium carbonate?
  - How many moles of Ammonium Nitrate can be produced from 3 moles of Barium Nitrate?
  - How many moles of barium carbonate would be produced from 6 moles of ammonium carbonate?
  - How many grams of Barium nitrate are needed to produce 5 grams of barium carbonate?