## Theoretical and Percent Yield Worksheet

1. Given the following equation:

K<sub>2</sub>PtCl<sub>4</sub> + \_\_\_\_ NH<sub>3</sub> -----> \_\_\_\_ Pt(NH<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub> + \_\_\_

- a) Balance the equation.
- Determine the theoretical yield of KCl if you start with 34.5 grams of NH<sub>3</sub>.
  Starting with 34.5 g of NH<sub>3</sub>, and you isolate 76.4 g of Pt(NH<sub>3</sub>)<sub>2</sub>Cl<sub>2</sub>, what is the percent yield?
- 2. Given the following equation:

$$H_3PO_4 + 3KOH ----> K_3PO_4 + 3H_2O$$

- a) If 49.0~g of  $H_3PO_4$  is reacted with excess KOH, determine the percent yield of  $K_3PO_4$  if you isolate 49.0~g of  $K_3PO_4$ .
- 3. Given the following equation:

$$Al_2(SO_3)_3 + 6 NaOH ----> 3 Na_2SO_3 + 2 Al(OH)_3$$

- a) If you start with 389.4 g of  $Al_2(SO_3)_3$  and you isolate 212.4 g of  $Na_2SO_3$ , what is your percent yield for this reaction?
- 4. Given the following equation:

$$Al(OH)_3$$
 (s) + 3 HCl (aq) ----->  $AlCl_3$  (aq) + 3 H<sub>2</sub>O (l)

- a) If you start with 50.3~g of  $Al(OH)_3$  and you isolate 39.5~g of  $AlCl_3$ , what is the percent yield?
- 5. Given the following equation:

$$K_2CO_3$$
 +  $HCl$  ----->  $H_2O$  +  $CO_2$  +  $KCl$ 

- a) Balance the equation.
- betermine the theoretical yield of KCl if you start with 34.5 g of K<sub>2</sub>CO<sub>3</sub>.
  c) Starting with 34.5 g of K<sub>2</sub>CO<sub>3</sub>, and you isolate 3.4 g of H<sub>2</sub>O, what is the percent yield?
- 6. Given the following equation:

$$H_2SO_4 + Ba(OH)_2 \longrightarrow BaSO_4 + H_2O$$

- a) If 98.0~g of  $H_2SO_4$  is reacted with excess  $Ba(OH)_2$ , determine the percent yield of  $BaSO_4$  if you isolate 213.7~g of
- 7. Given the following equation:

- a) If you start with 82.4 g of CaCl2 and you isolate 82.4 g of Ca3(PO4)2, what is your percent yield for this reaction?
- 8. Given the following equation:

$$Cr(OH)_3$$
 +  $HI$  ----->  $CrI_3$  +  $H_2O$ 

a) If you start with 50.3 g of  $Cr(OH)_3$  and you isolate 39.5 g of  $CrI_3$ , what is the percent yield?