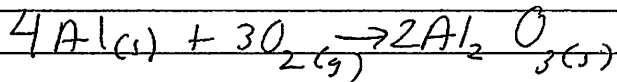Name: _____ Period: _____

`Mixed UP` (show ALL work)

1) Interpret the following equation in terms of particles, moles, mass.

$$4Al_{(s)} + 3O_{2(g)} \rightarrow 2Al_2O_{3(s)}$$

2) When solid copper is added to nitric acid, copper II nitrate, nitrogen dioxide, and water are produced. Write a balanced chemical equation and list all the mole ratios.

3) IF 5.50 mol of CaC_2 reacts with excess water, how many moles of acetylene (C_2H_2) a gas used in welding will be produced?

$$CaC_{2(s)} + 2H_2O_{(l)} \rightarrow Ca(OH)_{2(aq)} + C_2H_{2(g)}$$
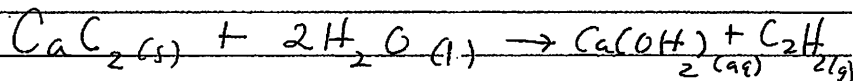
4) $3NaHCO_{3(aq)} + H_3C_6H_5O_{7(aq)} \rightarrow 3CO_{2(g)} + 3H_2O_{(l)} + Na_3C_6H_5O_{7(aq)}$

How many moles of $Na_3C_6H_5O_7$ can be produced if one tablet containing 0.0119 mol of $NaHCO_3$ is dissolved.

5) Write a balanced equation for the combustion of octane (C_8H_{18}) in gasoline. Calculate the mass of octane needed to release 5.00 mol CO_2.

6) $CH_{4(g)} + 3Cl_{2(g)} \rightarrow CHCl_{3(g)} + 3HCl_{(g)}$

How much CH_4 in grams is needed to produce 50.0 g of $CHCl_3$?

7) a solution of potassium chromate reacts with a solution of lead II nitrate to produce a yellow precipitate of lead II chromate and a solution of potassium nitrate.
A) write a balanced eq.
B) Determine the mass of lead chromate formed from 0.250 mol of potassium chromate.

8. $4Au_{(s)} + 8NaCN_{(aq)} + O_{2(g)} + 2H_2O_{(l)}$

$\rightarrow 4NaAu(CN)_{2(aq)} + 4NaOH_{(aq)}$
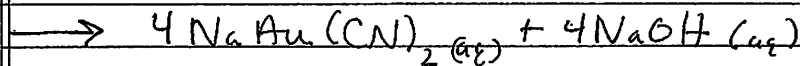
What is the mass of gold that can be extracted if 25.0 g of sodium cyanide is used?

9. Reactions used inflate auto airbags
   use sodium azide.

   $$2(NaN_3) \longrightarrow 2Na_{(s)} + 3N_{2(g)}$$

   What is the mass of N_2 produced
   from decomposition of $100.0g$ NaN_3?

10. Formation of acid rain (SO_2)
    reacts with oxygen and water in
    the air to produce sulfuric acid
    (H_2SO_4).

    Write a balanced equation.
    If $2.5g$ of SO_2 react with excess
    O_2 and H_2O, how much H_2SO_4
    is produced?