NAME: **HONORS CHEMISTRY**

SECTION: Mole-Mole Stoichiometry Problems

1. Balance the following reaction.

\_\_\_\_C2H2(g) + \_\_\_\_O2(g) → \_\_\_\_CO2(g) + \_\_\_\_H2O(l)

1. What class of reaction is this?
2. Explain the term *mole ratio* in your own words. When would you use it?
3. How many moles of ethyne, C2H2, are required to form 25.6 moles of CO2?

Write the mole ratio that you need:

Set up the factor label and solve:

1. If 9.8 moles of ethyne react completely, how many moles of oxygen will be required?

Write the mole ratio that you need:

Set up the factor label and solve:

1. If 17.34 moles of oxygen are consumed, how many moles of carbon dioxide will be produced?

Write the mole ratio that you need:

Set up the factor label and solve:

1. The formation of aluminum chloride from its constituent elements is represented by this equation:

2 Al(s) + 3 Cl2(g) → 2 AlCl3(s)

* 1. What class of reaction is this?
  2. How many moles of aluminum are needed to form 3.7 moles of AlCl3?
  3. How many moles of chlorine gas are required to react completely with 14.8 mol of Al?
  4. Calculate the number of moles of AlCl3 formed when 0.786 mol of chlorine gas reacts completely.

1. Copper reacts with aqueous silver nitrate according to the unbalanced equation shown below:

\_\_\_\_\_Cu(s) + \_\_\_\_AgNO3(aq) → \_\_\_\_Cu(NO3)2 (ag) + \_\_\_\_\_Ag(s)

* 1. What class of reaction is this?

* 1. How many moles of copper are needed to form 0.086 moles of silver metal?
  2. How many moles of silver nitrate are required to react completely with 0.0261 moles of copper?
  3. Calculate the number of moles of copper(II) nitrate formed when 1.108 mol of silver nitrate reacts with copper.