Stoichiometry: Mole Ratios & Mol conversions Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Worksheet B

Directions: Balance the equation. Then based on the amount of moles of each product or reactant given, determine the amount of moles of each of the other reactants/products involved in the reaction.

1. \_\_\_\_\_NH3(g) + \_\_\_\_\_O2(g) 🡪 \_\_\_\_\_N2(g) + \_\_\_\_\_H2O(l)
   1. 4 mol NH3
   2. 4 mol N2
   3. 4.5 mol O2
2. \_\_\_\_\_ Mg(s)  + \_\_\_\_\_HCl(g) 🡪 \_\_\_\_\_MgCl2(s) + \_\_\_\_\_H2(g)
   1. What **mass** of HCL is consumed by the reaction of 2.50 mol of Mg?
   2. What **mass** of each product is formed by 2.5 mol of Mg?
3. \_\_\_\_\_H2(g) + \_\_\_\_\_O2(g)  🡪 \_\_\_\_\_H2O(l) 
   1. What mass of oxygen gas is needed to produce 5 mol of H20(l)
   2. How many liters of hydrogen gas is needed to produce 5 mol of H20(l)
4. How many grams of tungsten can be obtained from 621 g of hydrogen gas?
   1. Reaction: \_\_\_\_\_WO3(s) + \_\_\_\_\_H2(g) 🡪 \_\_\_\_\_W(s) + \_\_\_\_\_H2O(l)
5. If chlorine gas is bubbled into a solution containing 45.1 grams NaOH, how many liters of of Cl2 will react?
   1. Reaction: \_\_\_\_\_NaOH + \_\_\_\_\_Cl2 🡪 \_\_\_\_\_NaCl + \_\_\_\_\_NaClO + \_\_\_\_\_H2O
6. If 8.72 grams of Cu(NO3)2 is obtained in a complete reaction, how many mols of nitric oxide would have to have formed in the reaction as well?
   1. Reaction: \_\_\_\_\_Cu + \_\_\_\_\_HNO3 🡪 \_\_\_\_\_Cu(NO3)2 + \_\_\_\_\_NO + \_\_\_\_\_ H2O
7. Calculate the number of grams of Carbon disulfide needed for a reaction involving 72.9 Liters chlorine gas.
   1. Reaction: \_\_\_\_\_CS2 + \_\_\_\_\_Cl2 🡪 \_\_\_\_\_CCl4 + \_\_\_\_\_S2Cl2
8. Iron in the form of a fine wire will burn in oxygen gas to form Iron(III)oxide.
   1. Write out the complete and balanced formula for this reaction.
   2. How many liters of oxygen gas are needed to produce 7.25 moles of Iron(III)oxide?
9. How many moles of AgNO3 are needed to react with 18.74 moles of CU?
   1. Reaction: \_\_\_\_\_AgNO3 + \_\_\_\_\_Cu 🡪 \_\_\_\_\_Cu(NO3)2 + \_\_\_\_\_Ag
10. How many grams of O2 are needed to react with 65.5 grams of C4H10 in this combustion reaction?
    1. Reaction: \_\_\_\_\_C4H10(g) + \_\_\_\_\_O2(g) 🡪 \_\_\_\_\_CO2(g) + \_\_\_\_\_H2O(g)
11. Ethanol, C2H5OH combusts with oxygen to give carbon dioxide and water. What is the amount of water produced in liters from 58.3 grams of Ethanol?