Name: Block: Date: _____

IC Ch. 9: Worksheet – Stoichiometry Problems (Moles to Moles & Mass to Mass Problems)

Instructions: Determine the type of Stoichiometry problem (moles A ▭ moles B or mass A ▭ mass B), then use stoichiometry to solve for the quantity requested.

1. How many moles of NH_3 are produced if 15.0 moles of N_2 is reacted with an excess of H_2 ?

   $N_{2\,(g)} + 3\,H_{2\,(s)} \longrightarrow 2\,NH_{3\,(g)}$

2. How many moles of silver (I) sulfide are formed when a 7.20 moles of silver reacts with sulfur?

   $2\,Ag_{(s)} + S_{(s)} \longrightarrow Ag_2S_{(s)}$

3. If 20.0 grams of zinc reacts with hydrochloric acid, how many grams of zinc chloride are produced?

   $Zn_{(s)} + 2\,HCl_{(aq)} \longrightarrow ZnCl_{2\,(s)} + H_{2\,(g)}$

4. How many grams of chlorine gas are needed to react with excess sodium iodide if you need to produce 10.0 grams of sodium chloride?

   $Cl_{2\,(g)} + 2\,NaI_{(s)} \longrightarrow 2\,NaCl_{(s)} + I_{2\,(s)}$

5. How many grams of oxygen are produced in the decomposition of 5.00 grams of potassium chlorate ($KClO_3$)?

   $2\,KClO_{3\,(s)} \longrightarrow 2\,KCl_{(s)} + 3\,O_{2\,(g)}$