Name: ________________________________ **Date:** ___________

Theoretical Yield and Limiting Reagents

1. For the reaction $3\ H_2\ (g) + N_2\ (g) \rightarrow 2\ NH_3\ (g)$, 3 mol H_2 is reacted with 6 mol N_2

   a: ___2___ mol of NH_3 is produced

   b: ___0___ mol H_2 remains

   c: ___5___ mol N_2 remains

2. For the reaction $2\ N_2H_4\ (l) + N_2O_4\ (l) \rightarrow 3\ N_2\ (g) + 4\ H_2O\ (l)$,
   160 g N_2H_4 is mixed with 160 g N_2O_4

   a: ___N_2O_4___ is the limiting reagent

   b: ___125___ g H_2O is produced

3. For the reaction $Fe_2O_3\ (s) + 3\ CO\ (g) \rightarrow 2\ Fe\ (g) + 3\ CO_2$,
   224 g of CO is available to react with 400 g Fe_2O_3

   a: ___Fe_2O_3___ is the limiting reagent

   b: ___279___ g of iron is produced

   c: ___210___ g of CO_2 is produced

4. For the reaction $2\ C_4H_{10}\ (g) + 13\ O_2\ (g) \rightarrow 8\ CO_2\ (g) + 10\ H_2O\ (l)$
   300 g of C_4H_{10} is combusted in 1000 g of O_2.

   a: ___O_2___ is the limiting reagent

   b: ___432___ g H_2O is formed