Name: _____ **Date:** _____

Mole Relations in Balanced Equations

1. For the reaction $2\ N_2H_4\ (l) + N_2O_4\ (l) \rightarrow 3\ N_2\ (g) + 4\ H_2O\ (l)$:

a: _____ mol of N_2O_4 is needed to react with 4.2 mol N_2H_4

b: 5 mol N_2H_4 yields _____ mol N_2

c: 2.3 mol of N_2O_4 produces _____ mol of H_2O

2. For the reaction $Ca_3N_2\ (s) + 6\ H_2O \rightarrow 3\ Ca(OH)_2\ (s) + 2\ NH_3\ (g)$

a: _____ mol of H_2O is needed to react with 2.5 mol Ca_3N_2

b: 1.6 mol Ca_3N_2 yields _____ mol NH_3

c: 0.62 mol H_2O produces _____ mol $Ca(OH)_2$

3. For the reaction $B_2O_3\ (s) + 6\ HF\ (l) \rightarrow 2\ BF_3\ (s) + 3\ H_2O\ (l)$

a: 4.2 mol HF yields _____ mol BF_3

b: 5.1 mol B_2O_3 produces _____ mol H_2O

c: 139 g of B_2O_3 yields _____ g BF_3

d: 278.4 g of B_2O_3 produces _____ ml H_2O