

Name: _____ Date: _____

Mole Relations in Balanced Equations

1. For the reaction $2 \text{N}_2\text{H}_4 (\text{l}) + \text{N}_2\text{O}_4 (\text{l}) \rightarrow 3 \text{N}_2 (\text{g}) + 4 \text{H}_2\text{O} (\text{l})$:

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 $\text{Ca}_3\text{N}_2 (\text{s}) + 6 \text{H}_2\text{O} \rightarrow 3 \text{Ca}(\text{OH})_2 (\text{s}) + 2 \text{NH}_3 (\text{g})$

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 $\text{Ca}(\text{OH})_2$

3. For the reaction $\text{B}_2\text{O}_3 (\text{s}) + 6 \text{HF} (\text{l}) \rightarrow 2 \text{BF}_3 (\text{s}) + 3 \text{H}_2\text{O} (\text{l})$

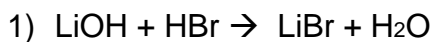
a: 4.2 mol HF yields _____ mol BF_3

b: 5.1 mol B_2O_3 produces _____ mol H_2O

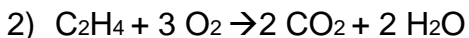
c: 139 g of B_2O_3 yields _____ g BF_3

d: 278.4 g of B_2O_3 produces _____ ml H_2O

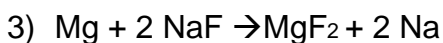
In the following problems, calculate how much of the indicated product is made. Show all your work.



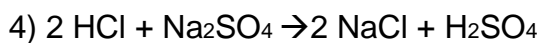
If you start with ten grams of lithium hydroxide, how many grams of lithium bromide will be produced?



If you start with 45 grams of ethylene (C_2H_4), how many grams of carbon dioxide will be produced?



If you start with 5.5 grams of sodium fluoride, how many grams of magnesium fluoride will be produced?



If you start with 20 grams of hydrochloric acid, how many grams of sulfuric acid will be produced?