1) 5 F2 + 2 NH3 -----> N2F4 + 6 HF All steps of this problem are related

a) What is the mole-to-mole ratio needed to find moles of NH3 , if moles of F2 are known

b) If you start with 25 g of F2 , how many moles is this ?

c) Now using info from b, how many moles of NH3 will be needed ?

d) And how many moles of HF will be produced ?

e) Using the info above, how many grams of HF will be produced ?

f) How many grams of N2F4 can be produced from those 25 g of F2 ?

2) Identify the limiting reactant

a) 2 Al + 3 Cl2 -----> 2 AlCl3

1.4 mol 5.3 mol

b) 2 H2 + O2 -----> 2H2O

6.4 mol 3.4 mol

c) P4O10 + 6 H2O -----> 4 H3PO4

0.48 mol 1.52 mol

3) Na + N2 ---- > Na3N Balance this reaction

How many grams of product can be produced from 10 g of Na ?

4) 2 N2O 5 -----> 4 NO2 + O2

When 25.0 g of N2O 5 is allowed is decompose. it is found that 10.0 g of NO2 forms. What is the percent yield ?

5) During WWI, the substance phosphine, PH3, was used a poisonous gas against the allied troops in their trenches.

Na3P + H2O ------ > PH3 + NaOH

Balance the reaction

What is the theoretical yield of PH3 when 150 g of Na3P is mixed with 250 grams of water? If the actual yield is 30 g, what is the % yield?