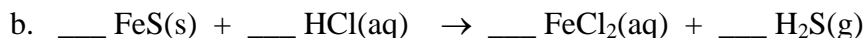
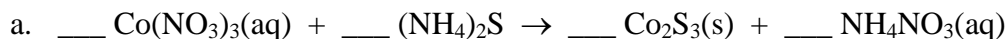


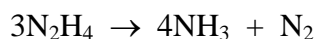
Name: _____

Quiz #5
CHEM 1411 — Fall 2009

1. Balance each of the following chemical equations: (25 pts)



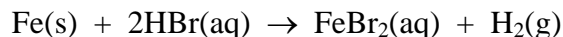
2. Consider the following balanced reaction:



How many moles of NH_3 form when 6.0 moles of N_2H_4 react? How many moles of N_2 are also produced? (25 pts)

- _____ (a) 3.0 mol NH_3 , 0.50 mol N_2
(b) 4.0 mol NH_3 , 1.0 mol N_2
(c) 8.0 mol NH_3 , 2.0 mol N_2
(d) 12 mol NH_3 , 8.0 mol N_2

3. Hydrobromic acid dissolves solid iron according to the following reaction:



What mass of HBr (in g) would you need to dissolve a 3.2 g pure iron bar on a padlock? (MM $\text{Fe} = 55.847$ g/mol, MM $\text{HBr} = 80.91$ g/mol) (25 pts)

- _____ (a) 2.3 g
(b) 4.6 g
(c) 7.1 g
(d) 9.3 g

4. A compound of nitrogen and oxygen with a molecular mass of 76.01 g/mol contains 36.85% N and 63.15% O. Calculate the **empirical** and **molecular** formulas, arranging the atoms in the order NO. (25 pts)