CHEMISTRY 11 STOICHIOMETRY SHEET #1

CALCULATIONS INVOLVING REACTIONS

Solve each of the following problems. Show your work and include a balanced equation for each problem.

1. How many moles of hydrogen gas are required to react with 2.5 moles of oxygen to produce water ? (a synthesis reaction)

2. How many moles of hydrochloric acid will be required to produce 0.40 moles of hydrogen gas by reacting with zinc ? (a single replacement reaction)

3. How many moles of nitrogen and hydrogen will be required to produce 1.70 moles of ammonia, NH_3 ? (another synthesis reaction)

4. How many moles of fluorine will be needed to produce 5.60 grams of hydrogen fluoride by reacting with hydrogen ?

5. How many grams of carbon will react with 0.25 mol of oxygen to produce carbon dioxide ?

6. What mass of oxygen can be produced when 13.6 grams of sulfur trioxide are decomposed ?

7. How many grams of chlorine are required to produce 355 g of carbon tetrachloride by reaction with carbon ?

8. What mass of magnesium are required to react with 1.62 grams of bromine to produce magnesium bromide ?

answers:

1. 5.0 mole
2. 0.80 mole
3. N_2 0.850 mole; H_2 2.55 mole
4. 0.140 mole
5. 3.0 g
6. 8.15 g
7. 327 g
8. 0.246 g