CHEMISTRY 30S WORKSHEETS
UNIT #3 - STOICHIOMETRY

MOLE- MOLE RELATIONSHIPS

1) Hydrogen sulfide + oxygen produces water + sulfur dioxide. How many moles of hydrogen sulfide can be burned by 0.75 mol of oxygen?

2) Potassium chlorate decomposes to produce potassium chloride + oxygen. How many moles of oxygen can be produced from 1.8 mol of potassium chlorate?

3) Octane, C_8H_{18}, burns to produce carbon dioxide + water vapor. How many moles of oxygen are needed to burn 0.40 mol of octane?

4) Iron burns to produce iron (III) oxide. How many moles of oxygen are needed to form 120 mol of iron (III) oxide?

5) How many moles of carbon dioxide are formed when 0.25 mol of methane burns?

6) Copper (II) oxide + ammonia produces water + nitrogen + copper.
a) How many moles of water are formed from 0.90 mol of copper (II) oxide?
b) How many moles of nitrogen are formed from 0.90 mol of copper (II) oxide?

7) Calcium hydroxide + hydrogen phosphate produces calcium phosphate + water. How many moles of calcium hydroxide are needed to react with 0.10 mol of hydrogen phosphate?

MOLE- GRAM RELATIONSHIPS

1) How many moles of sulfur dioxide form as 128 g of S burns according to the equation:
$S_8 + O_2 \rightarrow SO_2$

2) How many moles of ammonia can be produced from 10.0 g of hydrogen according to the equation: $N_2 + H_2 \rightarrow NH_3$

3) How many moles of hydrogen chloride are required to form 14.2 g of chlorine gas according to the equation: $HCl + O_2 \rightarrow H_2O + Cl_2$

4) How many moles of carbon dioxide are formed when 64 g of methane burns according to the equation: $CH_4 + O_2 \rightarrow CO_2 + H_2O$

5) How many moles of NO form as 189 g HNO_3 react? $3Cu + 8HNO_3 \rightarrow 3Cu(NO_3)_2 + 4H_2O + 2NO$

6) How many moles of H_3PO_4 will react with 60.0 g of sodium hydroxide?
$H_3PO_4 + NaOH \rightarrow Na_3PO_4 + H_2O$

7) How many moles of hydrogen molecules are formed from 18.25 g of hydrogen chloride?
$Zn + HCl \rightarrow ZnCl_2 + H_2$

8) How many moles of potassium permanganate are needed to produce 35.5 g of chlorine gas?
$2KMnO_4 + 16HCl \rightarrow 2KCl + 2MnCl_2 + 8H_2O + 5Cl_2$