REVIEW QUESTIONS
Chapter 3

1. What mass of chlorine is present in 12.2 g of $PbCl_2$?

2. How many atoms of oxygen are present in 2.15 g of $Ca_3(PO_4)_2$?

3. What is the percent composition of caffeine ($C_8H_{10}N_4O_2$)?

4. Determine the empirical formula for a compound with the following composition:

   62.1% C 5.21% H 12.1% N 20.7% O

5. The alcohol in "gasohol" burns according to the equation shown below:

$$C_2H_5OH\ (l)\ +\ 3\ O_2\ (g)\ \rightarrow\ 2\ CO_2\ (g)\ +\ 3\ H_2O\ l)$$

How many grams of CO_2 are produced when 3.00 g of C_2H_5OH burns according to this reaction? (Assume excess oxygen)

6. How many grams of NO form when 1.50 g NH_3 react with 1.85 g of O_2 as shown below:

$$4\ NH_3\ (g)\ +\ 5\ O_2\ (g)\ \rightarrow\ 4\ NO\ (g)\ +\ 6\ H_2O\ (l)$$

7. When 30.0 g of benzene (C_6H_6) and 65.0 g of bromine are reacted together as shown below, 56.7 g of bromobenzene (C_6H_5Br) is formed. What is the percent yield of this reaction?

$$C_6H_6\ +\ Br_2\ \rightarrow\ C_6H_5Br\ +\ HBr$$