1. Given the following equation: 8 Fe + S8 ---> 8 FeS

What mass of iron is needed to react with 16.0 grams of sulfur?



How many grams of FeS are produced?



2. Given the following equation: 2 NaClO3 ---> 2 NaCl + 3 O2

12.00 moles of NaClO3 will produce how many grams of O2?



How many grams of NaCl are produced when 80.0 grams of O2 are produced?



3. Given the following equation: Cu + 2 AgNO3 ---> Cu(NO3)2 + 2 Ag

How many moles of Cu are needed to react with 3.50 moles of AgNO3?



If 89.5 grams of Ag were produced, how many grams of Cu reacted?



4. Molten iron and carbon monoxide are produced in a blast furnace by the reaction of iron(III) oxide and coke (pure carbon). If 25.0 kilograms of pure Fe2O3 is used, how many kilograms of iron can be produced? The reaction is: Fe2O3 + 3 C ---> 2 Fe + 3 CO



5. The average human requires 120.0 grams of glucose (C6H12O6) per day. How many grams of CO2 (in the photosynthesis reaction) are required for this amount of glucose? The photosynthetic reaction is: 6 CO2 + 6 H2O ---> C6H12O6 + 6 O2



6. How many grams of Ca(OH)2 are needed to make 100.0 mL of 0.250 M solution?

.250 moles/liter x 100 mL x 1L/1000mL x 74 g/mole=1.85 grams

7. What is the molarity of a solution made by dissolving 20.0 g of H3PO4 in 50.0 mL of solution?

20g H3PO4 /50 mL x 1000mL/L x 1 mole H3PO4 / 94 g H3PO4 = 4.25 M H3PO4

8.  What weight (in grams) of KCl is there in 2.50 liters of 0.500 M KCl solution?

.5 moles KCl/L x 2.5 L x 74.6 g KCl/ 1 mole KCl= 93.25 g KCl

9.  What is the molarity of a solution containing 12.0 g of NaOH in 250.0 mL of solution?

12 g NaOH/ 250 mL x 1000 mL/L x 1 mole NaOH/40 g NaOH= 1.2 M NaOH