

**CHM 130LL
PRACTICE PROBLEMS FOR THE MAJOR QUIZ 3**

Chemical Quantities (Chapter 7)

1. Percent by mass composition of a chemical compound.

Example: What is the percent by mass of carbon in sucrose, $C_{12}H_{22}O_{11}$. *42.10% C*

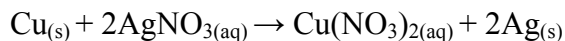
2. Preparation of aqueous solutions by dilution (use the dilution formula $M_1V_1=M_2V_2$). (Chapter 12)

Example: What volume in mL of 6.0 M $HCl_{(aq)}$ is needed to prepare 0.500 L of a 2.3 M $HCl_{(aq)}$. *1.9×10^2 mL $HCl_{(aq)}$*

Stoichiometry (Chapter 9)

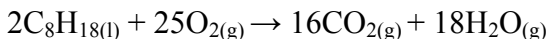
1. Moles to moles conversions from the balanced chemical equation.

Example: Calculate the number of moles of $Ag_{(s)}$, produced by 3.14 moles of $Cu_{(s)}$ according to the following balanced chemical equation: *6.28 mol Ag*



2. Grams to moles conversions

Example: How many moles of $CO_{2(g)}$ are produced by a combustion reaction of 25.0 g of $C_8H_{18(l)}$? *1.75 mol CO_2*



3. Grams to grams conversions

Ex ample: Calculate the number of grams of $\text{H}_2\text{O}_{(l)}$ produced by a neutralization reaction of 3.00 g of $\text{Mg}(\text{OH})_{2(aq)}$ with an excess of $\text{HCl}_{(aq)}$. *1.85 g H_2O*

