

Chemistry 105 - Fundamental Chemistry

Professor Czerwinski

- 1) Calculate the mass of:
 - a) 3.00 moles of CO_2 . (**132 g**)
 - b) 3.58×10^{22} atoms of Ar. (**1.43×10^2 amu**)

- 2) Calculate the number of molecules in 500mg of vitamin C (the molecular formula is $\text{C}_6\text{H}_8\text{O}_6$). (**1.71×10^{21}**)

- 3) How many Cu atoms are there in one penny (an old one made only of copper) which weighs 3.090g? (**2.929×10^{22}**)

- 4) Silver sells at 0.038 mol for \$1.00. How many grams will you get for a dollar? (**4.1 g**)

- 5) Calculate the molarity of 0.250 L of solution containing 5.44g of Na_2CrO_4 . (**0.134M**)

- 6) If 2.60 g of NaBr is dissolved in enough water to make 0.160 L of solution, what is the molar concentration of NaBr? (**0.158 M**)

- 7) How many milliliters of 0.10 M NaBr would you need to supply 2.60 g of NaBr. (**250 mL**)

- 8) For each of the following solutions, tell how many grams of solute would be necessary to prepare the following solutions:
 - a) 0.10 L of 0.10 M AgNO_3 (**1.7 g**)
 - b) 5.0 mL of 0.05 M NaCN (**0.01 g**)
 - c) 0.10 L of 0.10 M BaCl_2 (**2.1 g**)
 - d) 0.250 L of 0.0014 M KMnO_4 (**0.055 g**)

- 9) What volume of 1.000 M KNO_3 must be diluted with distilled water to prepare 500.0mL of 0.250 M KNO_3 solution? (**0.125L**)