

Chemistry 105 - Fundamental Chemistry

Fall Semester 1997 - Moles and Molarity

- 1) Calculate the mass of:
 - a) 3.00 moles of CO_2 .
 - b) 3.58×10^{22} atoms of Ar.

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

- 3) How many Cu atoms are there in one penny (an old one made only of copper) which weighs 3.090g?

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

- 5) Calculate the molarity of 0.250 L of solution containing 5.44g of Na_2CrO_4 .

- 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?

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

- 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
 - b) 5.0 mL of 0.05 M NaCN
 - c) 0.10 L of 0.10 M BaCl_2
 - d) 0.250 L of 0.0014 M KMnO_4

- 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?