SHOW ***ALL WORK***, ALL EQUATIONS, and ALL UNITS
Molarity and Percent Composition – More Practice before the quiz:

1) Calculate the number of moles of Cu_2SO_4 are dissolved in 4.55 L of a 8.50 *M* Cu_2SO_4 solution?

2) Calculate the mass (in kilograms) of Ag_3PO_4 that are dissolved in a 4.95 *M* solution that has a volume of 2880 mL?

$$\frac{2880\ mL}{} \times \frac{1\ L}{10^3\ mL} \times \frac{4.95\ mol\ Ag_3PO_4}{L} \times \frac{418.58\ g}{1\ mol\ Ag_3PO_4} \times \frac{1\ kg}{10^3\ g} = 5.97\ kg\ Ag_3PO_4$$

3) Calculate the mass in grams of $Sn(NO_3)_4$ that are needed to make five liters of a 6.43 *M* solution?

4) Calculate the molarity of a $Bi_2(SO_4)_3$ solution where 285.32 grams of $Bi_2(SO_4)_3$ is dissolved in enough solvent so that the final volume is 3.90 liters?

$$\frac{285.32\ g}{} \times \frac{1\ mol\ Bi_2\left(SO_4\right)_3}{706.14\ g} = 0.404\ mol\ Bi_2\left(SO_4\right)_3$$

$$M = \frac{0.404\ mol\ Bi_2\left(SO_4\right)_3}{3.90\ L} = 0.104\ \frac{mol}{L} \quad or \quad 0.104\ M$$

5) Calculate the molarity of a H_3PO_4 solution where 533 grams of H_3PO_4 is dissolved in enough water so that the final volume is 925 mL?

6) Give the complete directions for the preparation of 7.20 liters of a 10.3 *M* $Zn(IO_3)_2$ solution.

$$\frac{7.20\ L}{} \times \frac{10.3\ mol\ Zn\left(IO_3\right)_2}{L} \times \frac{415.21\ g}{1\ mol\ Zn\left(IO_3\right)_2} = 30791.97\ g\ Zn\left(IO_3\right)_2$$

Place 30791.97 g $Zn(IO_3)_2$ in a volumetric flask and then add enough water so that the total volume equals 7.20 liters.

7) Calculate the percent composition of all the elements in $Zr_3(PO_4)_4$.

8) Calculate the percent composition of sulfur in Rb_2SO_4.

Rb_2SO_4 : 2(85.47g) + 32.06g + 4(16g) = 267 g/mol

$$\%\ S = \frac{32.06\ g}{267\ g} \times 100 = 12.0\%$$