CHEM 1190 Concentration Conversion Drill Problems

1. A 8.00 % by mass aqueous solution of ammonia has a density of 0.9651 g/mL.
   a) Calculate the molality of the solution.
   b) Calculate the molarity of the solution.
   c) Calculate the mole fraction of water for the solution.

2. a) Calculate the mole fraction of a 0.75 m KBr solution.
   b) Calculate the mass percent of a 0.75 m KBr solution.

3. A 1.52×10^{-5} M sodium nitrate solution has a density of 1.00 g/mL. Calculate its concentration in terms of ppm.

4. What is the molality of ammonium chloride in an aqueous solution that has mole fraction of ammonium chloride equal to 0.0823?

5. The mole fraction of ethanol, CH_3CH_2OH, in an aqueous solution of ethanol is 0.4536. The density of the solution is 0.872 g/cm^3. What is the molarity of the solution?

6. The density of 3.54 M solution of ammonium chloride in solution is 1.0512 g/cm^3.
   a) What is the molality of the solution?
   b) What is the mole fraction of the solution?
   c) What is the concentration in terms of ppt (parts per thousand)?