Concentration Worksheet

1) How many grams of beryllium chloride are needed to make 125 mL of a 0.050 M solution?

2) How many grams of beryllium chloride would you need to add to 125 mL of water to make a 0.050 M solution?

3) The density of ethanol is 0.789 g/mL. How many grams of ethanol should be mixed with 225 mL of water to make a 4.5% (v/v) mixture?

4) Explain how to make at least one liter of a 1.25 molar ammonium hydroxide solution.

5) What is the molarity of a solution in which 0.45 grams of sodium nitrate are dissolved in 265 mL of solution.

6) What is the mole fraction of sulfuric acid in a solution made by adding 3.4 grams of sulfuric acid to 3,500 mL of water?

7) What will the volume of a 0.50 M solution be if it contains 25 grams of calcium hydroxide?

8) How many grams of ammonia are present in 5.0 L of a 0.050 M solution?

Solutions Worksheet #5

1. What would be the percent concentration of each of the following solutions?
   a. 54.0 g of $AgNO_3$ g is dissolved in 128 g of water.
   b. 4.22 g of K_2CO_3 is dissolved in 426 mL of water.
   c. 0.762 g of ZnF_2 is dissolved in 1.30 liters of water.

2. What weight of solute is needed to produce each of the indicated solutions?
   a. 500.0 g of a 6.40% NaCl solution.
   b. 136 g of a 14.2% $LiNO_3$ solution.
   c. 42.2 g of a 7.60% $AgNO_3$ solution.

3. How many grams of water should be used in each of the problems in "2" above.

4. How many grams of the following solutes would you need to prepare the indicated volume and concentration of the solutions given?
   a. 340. mL of a 1.82 M aluminum nitrate solution.
   b. 25.0 mL of a 4.26 M potassium cyanide solution.
   c. 370. mL of a 0.00674 M ammonium sulfate solution.

5. What should the final volume(mL) of each solution be so that the amount of solute dissolved will produce the indicated concentration.
   a. 2.86 g of copper(I) carbonate to produce a 0.640 M solution.
   b. 12.62 g of calcium hydrogen carbonate to produce a 1.28 M solution.
   c. 54.26 g of sodium oxide to produce a 0.430 M solution.

6. What will be the final concentration of a solution prepared by dissolving the indicated solute in enough water to produce the indicated volume of solution?
   a. 15.4 g of strontium acetate filled up to 340. mL.
   b. 176.2 g of Iron(III) sulfite filled up to 1.42 liters.
   c. 3.22 g of copper(I) chlorate filled up to 40.0 liters.

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