1. Define concentration \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_means there is a small amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ means there is a relatively large amount of solute.

3. These terms are not very definite and are unrelated to the degree to which a solution is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A saturated solution of a substance that is not very \_\_\_\_\_\_\_\_\_\_\_\_ might be very dilute, which means having little solute added.

4. Define molarity **and write the formula.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. In order to relate molarity to the mass (as we usually measure in grams), you must know the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the solute.

6. How would you write “one molar” using numbers and symbols? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Why would the molarity not be 1 M if 1 mole of solute was added to 1 liter of solute?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. To make a solution of 1 L, the solute is dissolved in \_\_\_\_\_\_\_\_\_\_\_\_\_ than 1 L of solvent; then more solvent is added to bring the \_\_\_\_\_\_\_\_\_\_\_\_\_ volume to 1 L.

9. Create a **flow chart** that outlines the steps in preparing a 0.500 M solution of copper sulfate.

Calculation practice—Complete practice problems and SHOW WORK. Let me help if you do not understand, but DO NOT COPY this work from anyone else.

A. You have 3.50 L solution that contains 9.00 g of sodium chloride, NaCl. What is the molarity of that solution?

B. You have 0.8 L of a 0.5 M HCl solution. How many moles of HCl does this solution contain?

C. To produce 40.0 g of silver chromate, you will need at least 23.4 g of potassium chromate in solution as a reactant. All you have on hand is 5 L of 6.0 M potassium chromate solution. What volume of the solution is needed to give you the 23.4 g K2CrO4 needed for this reaction?

Practice (Page 421)

1.

2.

3.

Math Tutor (page 430)

1.

2.