Name:_____

Concentration Worksheet

Show all work and use the correct units

1. Find the concentration of a mixture that contains 12.0 grams of silver nitrate in 60.0 mL of water.

2. Find the concentration of a mixture that contains 1600 grams of salt in 4 liters of water.

3. What mass of solute would be needed to make 50.0 mL of salt solution having a concentration of 10.0g/L?

4. What mass of solute would be needed to make 6.00 L of nickel nitrate solution having a concentration of 24.0 g/l?

5. 12.0 grams of nickel (II) chloride has dissolved in 60.0 mL of water. What mass of nickel chloride would you add to 600 mL of water so you would have a solution of the same concentration?

6. What volume of solvent in liters is needed to make a solution having a concentration of 10 g/L if you are using 5 grams of solute?

7. What volume of solvent in litres is needed to make a solution having a concentration of 0.50 g/L if you are using 1 gram of solute?

8. How much solute is needed to make 2.00 L of a sugar solution with a stregth of 5.00 g/L?

9. What is the strength of a solution made by adding 4.0 grams of silver nitrate to 250 mL of water?

10. What volume of water is needed to add to 0.5 gram of sugar to make a solution with a concentration of 0.1 g/L?

11. 65 g of sugar is dissolved in 750ml of water what is the concentration of the solution?

12. Which is more concentrated 34 g of salt dissolved in 100 ml of water or 100 g of salt in 1500 ml of water?

13. If the solubility of salt in water was determined to be .5 g/ml would a solution that had 50 g of salt in 150 ml of water be considered saturated?

14. If the concentration of a solution is determined to be .27 g/ml and it was dissolved in 200 ml of solvent how much solute was used to make it?

15. If the concentration of sugar in water is determined to be .45 g/ml and 100 g of sugar was used to make the solution how much water was used?

16. Sand is insoluble in water. If you have 50g of sand how much water would you need to dissolve it?

17. A boric acid solution is used in ophthalmic drops (for eyes). What mass of boric acid is present in 250.0 mL of a solution that is 2.25 % m/v of acid in water?

Application

Develop three concentration questions:

- one in which you ask the person to find the concentration of a solution (Like: *Find the concentration of a mixture that contains 12.0 grams of silver nitrate in 60.0 mL of water*.)
- one where you ask the person to find the mass of solute needed to make a particular amount of solution of a specific concentration (Like*: What mass of solute would be needed to make 50.0 mL of salt solution having a concentration of 10.0g/L?*)
- another in which the person is asked to find the volume of solvent used with a specific mass of solute to make a solution of a particular strength.(Like*: What volume of water is needed to add to 0.5 gram of sugar to make a solution with a concentration of 0.1 g/L?*)