

Solution Concentration - Mass % and Molarity

Name _____

MASS%:

Given the following information about each solution calculate the % solution:

- 1) 25g of solute in 100g of water.
- 2) 25g of solute in 200g of water.
- 3) 25g of solute in 50g of water.
- 4) 45g of solute in 250g of water.
- 5) 2.00 moles of NaCl in 120g of water.
- 6) 5.30 moles of $\text{Ca}(\text{NO}_3)_2$ in 425g of water.

Now calculate the requested value using the information provided:

- 7) How many grams of NaCl solid would you get if you evaporated all of the water from 125g of 3.00% Saline solution?
- 8) If you wanted to make 325g of your own saline solution, how many grams of NaCl would you need, so that you will have a 3.00% solution.
- 9) Look at the solubility curves graph on the other worksheet. What is the percent solution for a saturated solution of NaNO_3 at 20°C? What about 80°C?
- 10) What is the percent solution for NH_3 at 20°C and at 80°C?

MOLARITY:

Calculate the molarity of the following solutions:

- 11) 3.4 moles of solute in 2.00 Liters of solution
- 12) 3.4 moles of solute in 4.00 Liters of solution
- 13) 0.045 moles of solute in 250 mL of solution
- 14) 3.4 grams of HCl in 0.500 Liters of solution
- 15) 105 grams of NaCl in 350 mL of solution

Now calculate the requested value using the information provided:

- 16) How many moles of solute are dissolved in 0.250 L of 1.45 M solution?
- 17) How many moles of solute are dissolved in 350 mL of 6.0M solution?
- 18) What volume of solution is needed if you want 0.450 moles of solute for a reaction if the solution has a molarity of 0.500M?
- 19) What volume of 6.00 M HCl solution would be needed for a reaction if you know that 3.00 moles of HCl were required?
- 20) How many grams of NaOH are dissolved in 250mL of 0.500 M solution?

- 1) 20%
- 2) 11%
- 3) 33%
- 4) 15%
- 5) 49.3%
- 6) 67.2%
- 7) 3.75g
- 8) 10.1g
- 9)
- 10)
- 11) 1.7M
- 12) 0.85M
- 13) 0.18M
- 14) 0.19M
- 15) 5.13M
- 16) 0.363 moles
- 17) 2.1 moles
- 18) 0.900 L or 900 mL
- 19) 0.500 L or 500 mL
- 20) 5.00 g