

1. What is the mass percent of NaCl in a solution created by dissolving 450 grams of NaCl in 2420 grams of water?
2. What is the mass percent of KI in a solution that has 105 grams of KI into 400 grams of solution?
3. How many grams of NaBr are in 35 grams of a 12% by mass solution of NaBr?
4. If I obtain 45 grams of NaCl from 120 grams of salt solution, what mass percent of NaCl was the solution?
5. If I obtain 500 grams of KI from a 60% by mass solution, how many grams of solution did I have?
6. What is the mass percent of CaCl_2 if 578 grams of calcium chloride are dissolved 3200 grams of water?
7. What is the mass percent of $\text{Ca}(\text{NO}_3)_2$ if 683 grams of calcium nitrate are dissolved in water to make 950 grams of solution?
8. If I have a 37% ZnCl_2 solution, how many grams of zinc chloride are in 350 grams of solution?
9. If I want to create a 70% by mass solution of NaCl how many grams of salt do I need to create 80 grams of solution?
10. If I dissolve 1.8 mole of NaCl in 520 grams of water, what is the % by mass of salt in the solution? (careful, this one is tricky!!)

- Calculate the number of mL of 2.00 M HNO_3 solution required to react with 216 grams of Ag according to the equation. $3 \text{ Ag(s)} + 4 \text{ HNO}_3 \text{ (aq)} \longrightarrow 3 \text{ AgNO}_3 \text{ (aq)} + \text{NO(g)} + 2 \text{ H}_2\text{O(l)}$
- Calculate in mL the volume of 0.500 M NaOH required to react with 3.0 grams of acetic acid. The equation is: $\text{NaOH(aq)} + \text{HC}_2\text{H}_3\text{O}_2 \text{ (aq)} \longrightarrow \text{NaC}_2\text{H}_3\text{O}_2 \text{ (aq)} + \text{H}_2\text{O(l)}$
- Calculate the number of grams of AgCl formed when 0.200 L of 0.200 M AgNO_3 reacts with an excess of CaCl_2 . The equation is: $2 \text{ AgNO}_3 \text{ (aq)} + \text{CaCl}_2 \text{ (aq)} \longrightarrow 2 \text{ AgCl(s)} + \text{Ca(NO}_3)_2 \text{ (aq)}$
- Calculate the mass of AgCl formed when 150 ml of 0.100 M solution of NaCl is added to 0.100 L of 0.200 M AgNO_3 . The equation is: $\text{AgNO}_3 \text{ (aq)} + \text{NaCl (aq)} \longrightarrow \text{AgCl(s)} + \text{NaNO}_3 \text{ (aq)}$
- To neutralize the acid in 10.0 mL of 18.0 M H_2SO_4 that was accidentally spilled on a laboratory bench top, solid sodium bicarbonate was used. The container of sodium bicarbonate was known to weigh 155.0 g before this use and out of curiosity its mass was measured as 144.5 g afterwards. The reaction that neutralizes sulfuric acid is as follows. $\text{H}_2\text{SO}_4 + 2 \text{ NaHCO}_3 \longrightarrow \text{Na}_2\text{SO}_4 + 2 \text{ CO}_2 + 2 \text{ H}_2\text{O}$
 - Was sufficient sodium bicarbonate used to neutralize the acid?
 - Calculate the limiting reactant.
 - Calculate the maximum yield in grams of sodium sulfate and liters of carbon dioxide at 25°C and 1 atm.
- Barium nitrate and potassium sulfate solutions react and form a precipitate. What is the precipitate? How many mL of 0.40 M $\text{Ba(NO}_3)_2$ solution are required to precipitate completely the sulfate ions in 25 mL of 0.80 M K_2SO_4 solution?