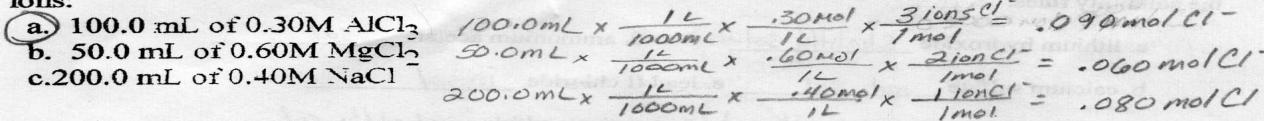


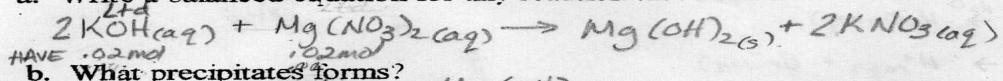
Ppt/Molarity, Stoichiometry and Dilution Ch 4 Sec 1-8 wkshf

1. Which of the following solutions contains the largest number of moles of chloride ions:



2. A 100.0 mL portion of 0.200M potassium hydroxide is mixed with 100.0 mL of 0.200M magnesium nitrate.

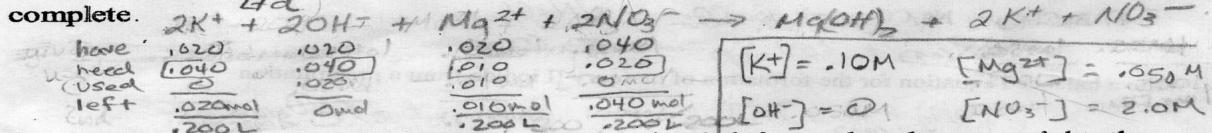
- a. Write a balanced equation for any reaction that occurs.



- c. What mass of ppt is produced?

$$100.0 \text{ mL} \times \frac{1 \text{ L}}{1000 \text{ mL}} \times \frac{0.200 \text{ mol KOH}}{1 \text{ L}} \times \frac{1 \text{ mol Mg(OH)}_2}{2 \text{ mol KOH}} \times \frac{58.33 \text{ g}}{1 \text{ mol}} = 0.5833 \text{ g}$$

- d. Calculate the concentration of each ion remaining in solution after precipitation is complete.



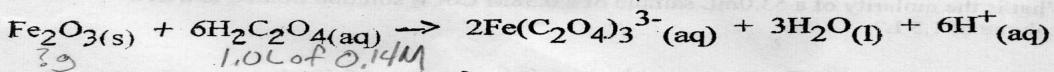
3. A 230. mL sample of a 0.275 M CaCl₂ solution is left on a hotplate overnight; the following morning the solution is 1.10 M. What volume of water evaporated from the 0.275 M CaCl₂ solution?

$$230 \text{ mL} \times 0.275 \text{ M} = 1.10 \text{ M} \times V_2$$

$$V = 0.575 \text{ L} = 57.5 \text{ mL}$$

230. mL
57.5 mL
173 mL evaporated

4. Rust stains can be removed by washing the surface with a dilute solution of oxalic acid, (H₂C₂O₄). The reaction is:



Is this an oxidation-reduction reaction?

- b. What mass of rust can be removed by 1.0L of a 0.14M solution of oxalic acid?

$$1.0 \text{ L} \times \frac{0.14 \text{ mol H}_2\text{C}_2\text{O}_4}{1 \text{ L}} \times \frac{1 \text{ mol Fe}_2\text{O}_3}{6 \text{ mol H}_2\text{C}_2\text{O}_4} \times \frac{159.7 \text{ g Fe}_2\text{O}_3}{1 \text{ mol Fe}_2\text{O}_3} = 3.7263$$

3.7 g Fe₂O₃