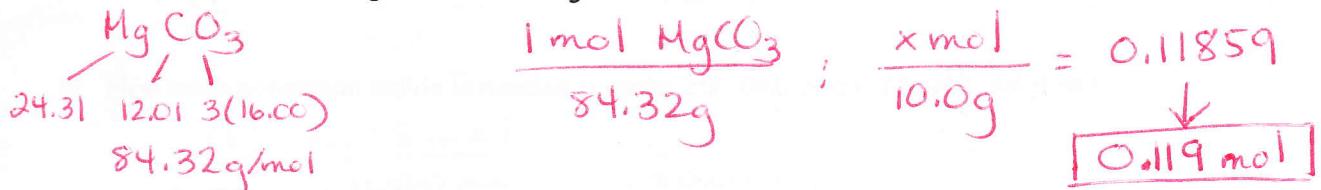
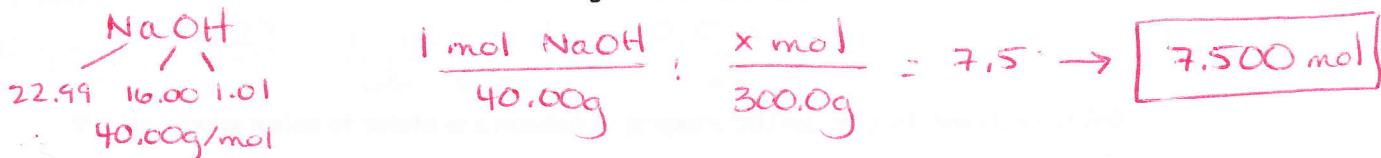


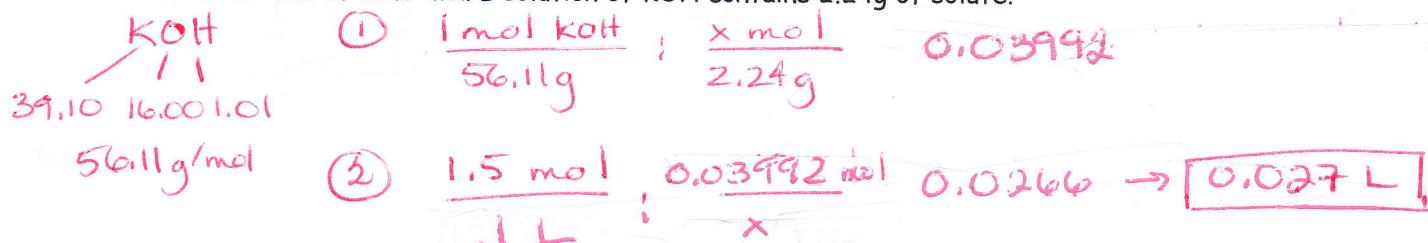
Molar Concentration

1. How many moles of $MgCO_3$ are in 10.0g of the substance?

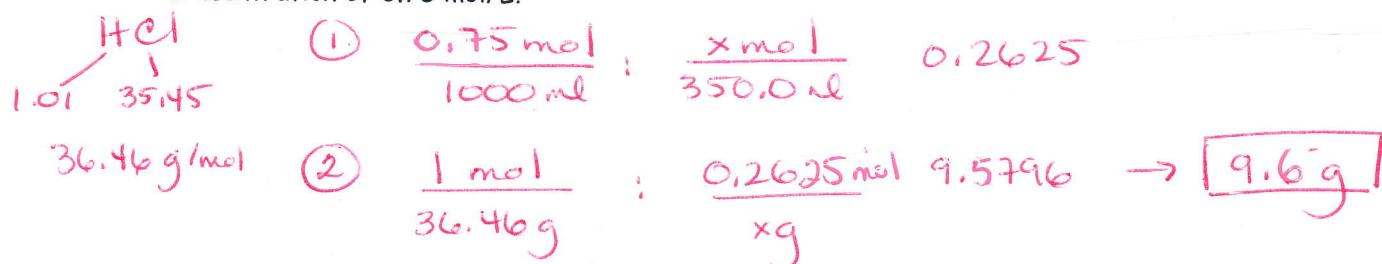
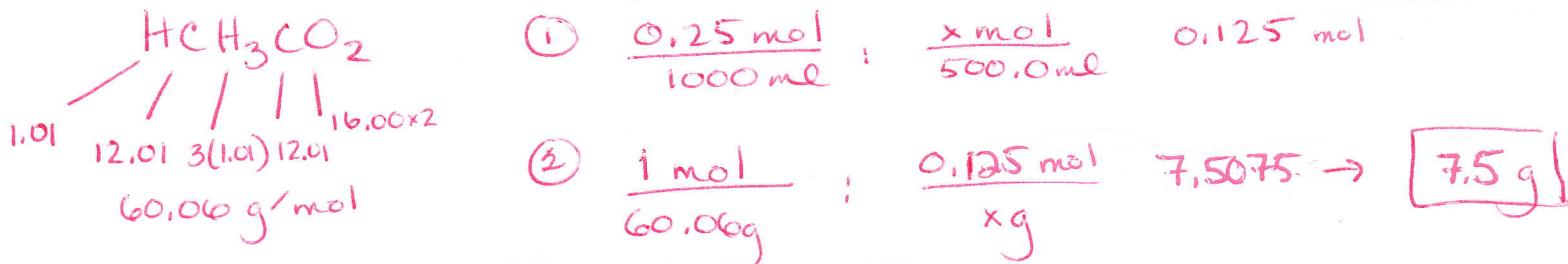
2. How many moles of NaOH are in 300.0g of the substance?



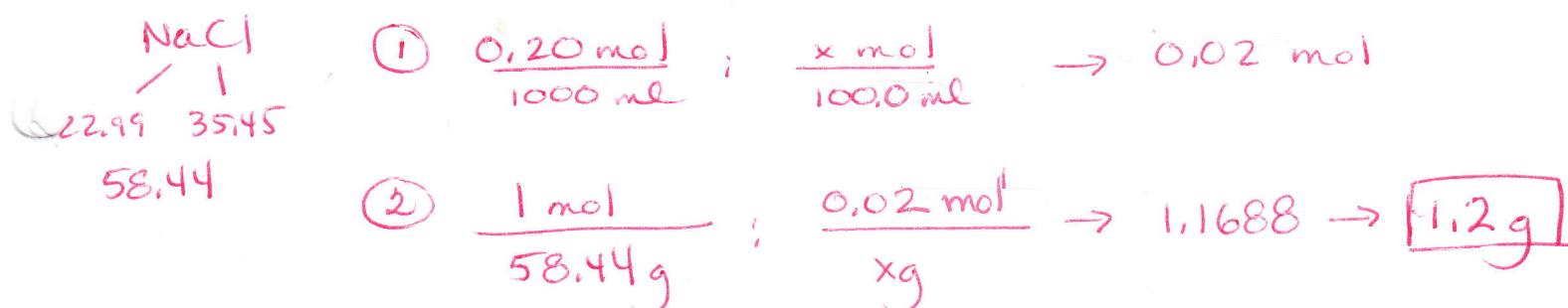
3. What volume of a 1.5 mol/L solution of KOH contains 2.24g of solute?



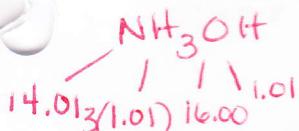
4. What mass of solute must be used to prepare 350.0mL of an HCl solution at a concentration of 0.75 mol/L?

5. How much HCH_3CO_2 is required to make 500.0mL of a 0.25mol/L solution?

6. What mass of NaCl must be used in order to make 100.0mL of a 0.20mol/L solution?



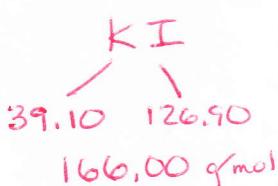
7. Calculate the mass of NH_3OH in 200.0mL of a 0.40mol/L solution.



(1) $\frac{0.40 \text{ mol}}{1000 \text{ mL}} : \frac{x \text{ mol}}{200.0 \text{ mL}} \rightarrow 0.08 \rightarrow 0.08 \text{ mol}$

(2) $\frac{1 \text{ mol}}{34.05 \text{ g}} : \frac{0.08 \text{ mol}}{x \text{ g}} \rightarrow 2.724 \rightarrow 2.7 \text{ g}$

8. How much potassium iodide is needed to make 250.0mL of a 0.25mol/L solution?



(1) $\frac{0.25 \text{ mol}}{1000 \text{ mL}} : \frac{x \text{ mol}}{250.0 \text{ mL}} = 0.0625$

(2) $\frac{1 \text{ mol}}{166.00 \text{ g}} : \frac{0.0625 \text{ mol}}{x \text{ g}} = 10.375 \rightarrow 10 \text{ g}$

9. How many moles of solute are needed to prepare 50.0mL of a 10.0mol/L solution?

$$\frac{10.0 \text{ mol}}{1000 \text{ mL}} : \frac{x \text{ mol}}{50.0 \text{ mL}} = 0.5 \rightarrow 0.500 \text{ mol}$$