Mole, molecule, atom, molarity, mass and volume problems
CLASS NOTES

1. **Finding quantity of moles (mol)**

a- Use mole formula: n=m/mm	b- Set up as ratio
How many moles are in 20.0 g of HCl?	How many moles of HCl are in 750 mL of a 4.3 M solution?

2. **Finding the molecule (molecule)**

1- Use mole formula: n=m/mm 2- Use molecule ratio (6.02×10^{23})
How many molecules are in 5.00 g of H_2SO_4**?**

3. **Finding the number of atoms in a molecule (atoms)**

1- Use mole formula: n=m/mm 2- Use molecule ratio (6.02×10^{23}) 3- Multiply answer by number of atoms molecule has
How many oxygen atoms are in 250 g of $CaCO_3$?

4. **Finding the volume (L)**

1- Use mole formula: n=m/mm 2- Use answer in mol/L ratio
What volume of a 1.5 M solution of NaCl contains 6.0 g of solute?

5. **Finding the molarity (mol/L)**

1- Use mole formula: n=m/mm 2- Divide answer by the volume	1- Set up ratio to find grams 2- Use mole formula: n=m/mm
Calculate the molarity of a solution by dissolving 24 g of NaOH in enough water to make 1.75 L of solution.	There are 600 g/ 400 mL of fructose $C_6H_{12}O_6$ in a Coke can. What is the molar concentration of the drink?

6. **Finding mass (g)**

1- Use mass formula m = n x mm 2- Find mole with ratio mol/L ratio or formula
How many grams of $CaCO_3$ are in 250 ml of a 0.75 M solution?