

Name _____
 Chemistry _____
 Stoichiometry _____
 Molar Mass #1 _____

- Mass is a means to measure number of particles.
- The only mathematical operation that can be performed on mass is to convert to moles.
- Mass is deceiving
- $207\text{g Pb} = 2\text{g H}_2$ This have the same number of particles, 1 mole.

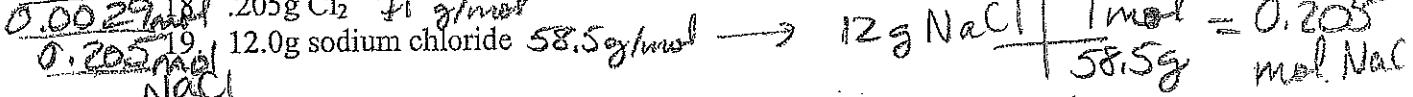
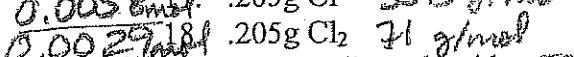
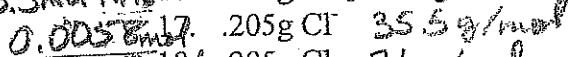
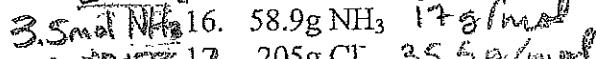
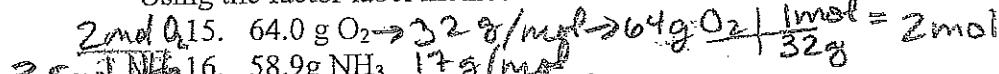
1. Molar mass is the mass of one mole of any chemical substance.
2. In order to calculate the mass of one mole of a compound one should add up the atomic mass units of each of the elements present in the compound.

Compute the molar mass of the following.

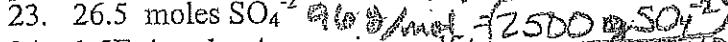
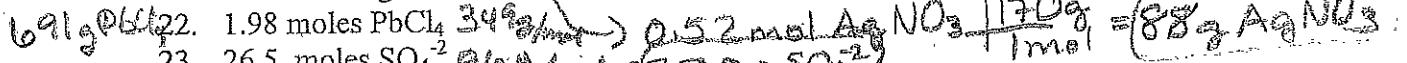
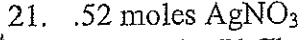
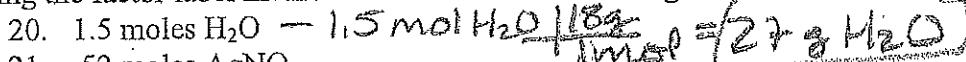
3. $\text{N}_2 \quad 2 \times 14 = 28 \text{ g/mol}$
4. $\text{I}_2 \quad 2 \times 127 = 254 \text{ g/mol}$
5. $\text{C}_6\text{H}_{12}\text{O}_6 \quad (6 \times 12) + (12 \times 1) + (6 \times 16) = 180 \text{ g/mol}$
6. $\text{Na}^+ \quad 23 \text{ g/mol}$
7. $\text{CO}_3^{2-} \quad 12 + (3 \times 16) = 60 \text{ g/mol}$
8. $\text{Al}(\text{HCO}_3)_3 \quad 27(1+2+16) \cdot 3 = 114 \text{ g/mol}$

9. Potassium Chloride $\text{KCl} \quad 74.5 \text{ g/mol}$
10. Sulfate $\text{SO}_4^{2-} \quad 96 \text{ g/mol}$
11. Magnesium phosphate $\text{Mg}_3(\text{PO}_4)_2 \quad 136 \text{ g/mol}$
12. Sulfuric Acid $\text{H}_2\text{SO}_4 \quad 98 \text{ g/mol}$
13. Carbon Tetrachloride $\text{CCl}_4 \quad 154 \text{ g/mol}$
14. $\text{H}_2\text{O} \quad 18 \text{ g/mol}$

Using the factor label method determine the number of moles in the following.



Using the factor label method determine the number of grams in the following.



Using the factor label method determine the number of particles for the following.

