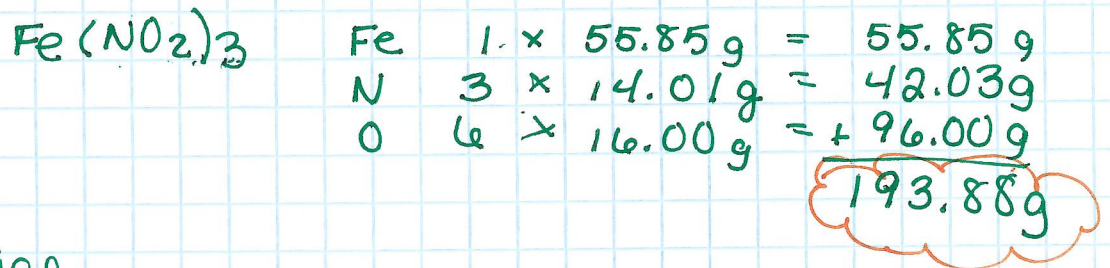
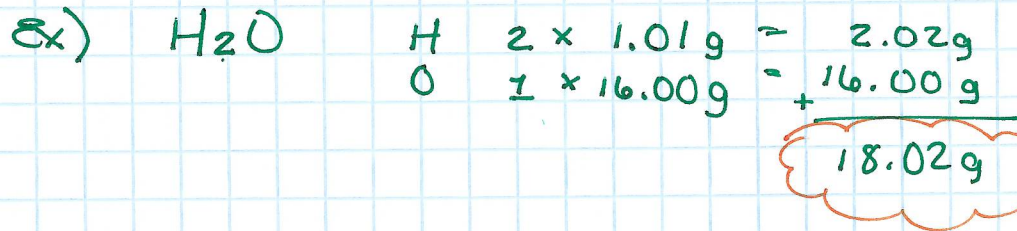


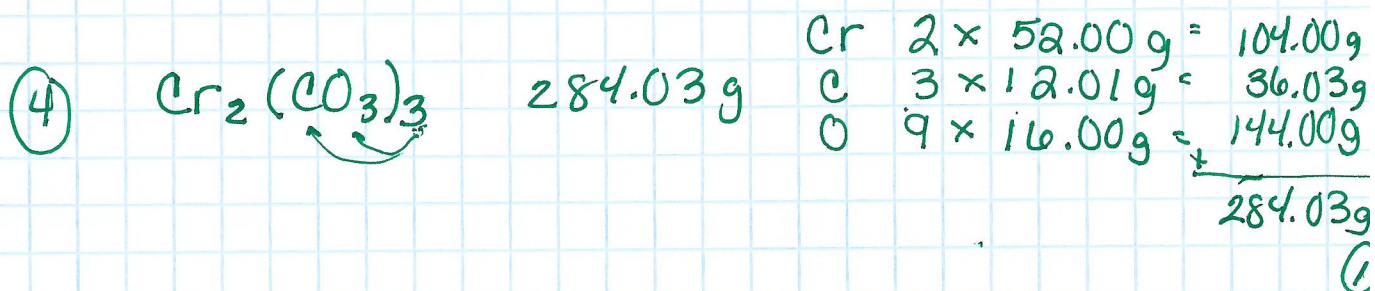
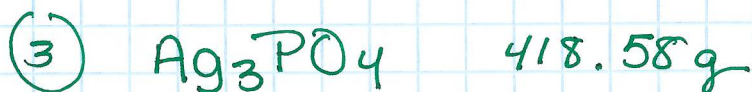
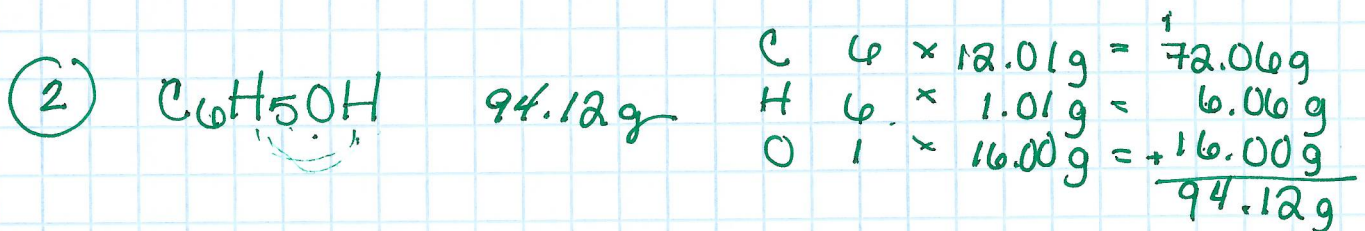
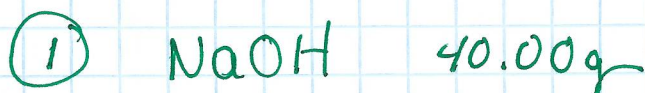
The Mole

↓
an amount

Molar Mass → mass of 1 mole of any substance
- add up the atomic masses for each element in your substance



Practice



% composition (% by mass)

percentage of the molar mass that comes from a particular element

$$\% \text{ element} = \frac{\text{mass element}}{\text{molar mass}} \times 100$$

Ex) Find the % of beryllium in $\text{Be}(\text{CN})_2$:

Molar Mass

$$\begin{array}{l} \text{Be} \quad 1 \times 9.01 \text{g} = 9.01 \text{g} \\ \text{C} \quad 2 \times 12.01 \text{g} = 24.02 \text{g} \\ \text{N} \quad 2 \times 14.01 \text{g} = 28.02 \text{g} \\ \hline \quad \quad \quad 61.05 \text{g} \end{array}$$

$$\% \text{Be} = \frac{9.01 \text{g}}{61.05 \text{g}} \times 100$$

$$\% \text{Be} = 14.76\%$$

Find the % of sulfur in $\text{Al}_2(\text{SO}_4)_3$.

Molar Mass

$$\begin{array}{l} \text{Al} \quad 2 \times 26.98 \text{g} = 53.96 \text{g} \\ \text{S} \quad 3 \times 32.07 \text{g} = 96.21 \text{g} \\ \text{O} \quad 12 \times 16.00 \text{g} = 192.00 \text{g} \\ \hline \quad \quad \quad 342.17 \text{g} \end{array}$$

$$\% \text{S} = \frac{96.21 \text{g}}{342.17 \text{g}} \times 100$$

$$\% \text{S} = 28.12\%$$

Find the % oxygen in $\text{Al}_2(\text{SO}_4)_3$

$$\% \text{O} = \frac{192.00 \text{g}}{342.17 \text{g}} \times 100 = 56.11\%$$

Find the % aluminum in $\text{Al}_2(\text{SO}_4)_3$

$$100\% - 28.12\% - 56.11\% = 15.77\%$$

CW - % Composition Alternative

Name _____

Period: _____

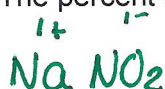
Directions: Solve each problem, SHOW YOUR WORK AND HAVE ANSWERS WITH CORRECT UNITS AND CORRECT SIGNIFICANT FIGURES!

% Composition – Find the % of the element indicated in each the compound.

1. The percent of bromine in copper (I) bromide



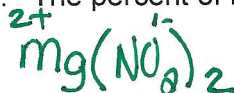
2. The percent of sodium in sodium nitrite



3. The percent of oxygen in potassium carbonate



4. The percent of nitrogen in magnesium nitrite



5. The percent of sulfur in aluminum sulfite

