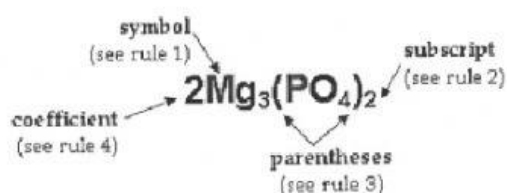


Using the tips and rules below (what we just went over in class. Complete the following problems.

### Counting Atoms Rules:



#### 1<sup>ST</sup> RULE OF SYMBOLS

Chemical symbols consist of either a capital letter or a capital letter and a lower case letter. This means that at least one atom of this element is present in the compound.

#### 2<sup>ND</sup> RULE OF SUBSCRIPTS

The subscript goes with the element it directly follows and indicates how many atoms of that element are present.

#### 3<sup>RD</sup> RULE OF PARENTHESES

The elements in the  $()$  go with the subscript that follows it. Numbers inside the  $()$  are multiplied by the numbers outside the  $()$ .

#### 4<sup>TH</sup> RULE OF COEFFICIENTS

The coefficient on a chemical compound tells how many molecules of that compound are present. The coefficient applies to every element in the compound and is multiplied with any subscripts present on an element.

Easy (only subscripts)

|    | Molecule               | Total atoms of each element       | Total atoms |
|----|------------------------|-----------------------------------|-------------|
| Ex | $\text{H}_2\text{O}$   | $\text{H} = 2 \quad \text{O} = 1$ | 3           |
| 1  | $\text{CO}_2$          |                                   |             |
| 2  | $\text{H}_2\text{O}_2$ |                                   |             |
| 3  | $\text{CH}_4\text{O}$  |                                   |             |

Medium (Coefficients & Subscripts)

|    | Molecule                | Total atoms of each element       | Total atoms |
|----|-------------------------|-----------------------------------|-------------|
| Ex | $2\text{H}_2\text{O}$   | $\text{H} = 4 \quad \text{O} = 2$ | 6           |
| 6  | $2\text{CO}_2$          |                                   |             |
| 7  | $2\text{H}_2\text{O}_2$ |                                   |             |
| 8  | $3\text{CH}_4\text{O}$  |                                   |             |

|    | Molecule                   | Total atoms of each element                           | Total atoms |
|----|----------------------------|-------------------------------------------------------|-------------|
| ex | $\text{Mg}(\text{SO}_3)_2$ | $\text{Mg} = 1 \quad \text{S} = 2 \quad \text{O} = 6$ | 9           |
| 11 | $\text{Na}(\text{SO}_4)_2$ |                                                       |             |
| 12 | $\text{Mg}(\text{PO}_4)_2$ |                                                       |             |