## Decoding Chemical Formulas

## Example:

$\mathrm{CO}_{2}$

|  |  |  | Total |
| :---: | :---: | :---: | :---: |
| Elements found in formula | Carbon | ----------------- | 2 |
| Number of atoms of element | 1 | ---------------- |  |

## $\mathrm{H}_{2} \mathrm{O}$

|  |  |  | Total |
| :---: | :---: | :---: | :---: |
| Elements found in formula |  | ---------------- |  |
| Number of atoms of element |  | ------------------- |  |

## $\mathrm{Zn}\left(\mathrm{NO}_{3}\right)_{2}$

Note: Multiply the subscript outside of the parentheses by everything inside of the parentheses.

|  |  |  | Total |  |
| :--- | :--- | :--- | :--- | :---: |
| Elements found in formula |  | Nitrogen |  | 3 |
| Number of atoms of element |  | 2 |  | 9 |

$\mathrm{Ca}(\mathrm{OH})_{2}$

|  |  |  |  | Total |
| :--- | :--- | :--- | :--- | :---: |
| Elements found in formula |  |  |  |  |
| Number of atoms of element |  |  |  |  |

## Coefficients

## Example:

$2 \mathrm{CO}_{2}$

| Total |  |  |  |  |  |  |
| :--- | :---: | :--- | :--- | :---: | :---: | :---: |
| Elements found in formula | Carbon |  |  |  |  |  |
| Number of atoms of element |  | 4 |  |  |  |  |

What is the mathematical relationship between coefficients and subscripts?

Write a mathematical expression to show the relationship between the coefficient and subscripts.

| $4 \mathrm{H}_{2} \mathrm{O}$ |  |  |  |  |
| :--- | :--- | :--- | :--- | :---: |
|  |  |  |  | Total |
| Elements found in formula |  |  |  |  |
| Number of atoms of element |  |  | - |  |

What is the mathematical relationship between coefficients and subscripts?

Write a mathematical expression to show the relationship between the coefficient and subscripts.

