**How to Count Atoms**

1. The **symbol** of an element represents one atom of that element.

e.g., Ba =

2. A **subscript** is a number written at the lower right corner beside the symbol of an element. If there is more than one atom of the element, then a subscript is used to indicate the number of atoms.

e.g., Cl₂

# of Cl atoms=

3. A subscript outside a bracket **multiplies** all the elements inside the brackets.

e.g., Ca₃ (PO₄)₂ =

Ca = \_\_\_\_\_\_\_\_

P = \_\_\_\_\_\_\_\_

O = \_\_\_\_\_\_\_\_

3. A **coefficient** is a number written in front of a chemical symbol and indicates the number of atoms of that element or number of molecules present

e.g., 3C = \_\_\_\_

2NaSO₄ = \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_

Note: a coefficient multiples the number of atoms of each element in the formula

e.g.,

2 H₂O

\_\_\_\_\_ molecules of H₂O

\_\_\_\_\_ H (hydrogen)

\_\_\_\_\_ O (oxygen)

3 Na₂SO₄

\_\_\_\_\_ molecules of Na₂SO₄

\_\_\_\_\_ Na (copper)

\_\_\_\_\_ S (sulphur)

\_\_\_\_\_ O (oxygen)

4 Pb(NO₃)₂

\_\_\_\_\_ molecules of Pb(NO₃)₂

\_\_\_\_\_ Pb (Lead)

\_\_\_\_\_ N (nitrogen)

\_\_\_\_\_ O (oxygen)

Counting Atoms Worksheet

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Directions for each problem

1) write down the different elements in each compound.

2) write down how many of that particular atom there are

3) how many atoms are there total in the compound.

Examples:

1) NaOH Na - 1

O - 1 3 total

H - 1

2) MgCl2 Mg – 1

Cl – 2 3 total

10) 5 ZnSO4 Zn – 5

S – 5 30 total

O – 20

1) NaOH 6) 4 HNO3 11) 4 Mg(OH)2

2) MgCl2  7) 4 Li2O 12) 2 NaOH

3) Li2SO4 8) 3 H2O 13) 4 Al2(SO3)3

4) NaC2H3O2 9) 3 Al2O3 14) 2 (NH4)3PO4

5) NH4Cl 10) 5 ZnSO4