

# How to Count Atoms

## Worksheet

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 **behind the s**  
there is more than one atom of the element, then a subscript is used t  
atoms.  
e.g., Cl<sub>2</sub> =
3. A **subscript outside a bracket** multiples all the elements inside the bra  
e.g., Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> =

Ca = \_\_\_\_\_  
P = \_\_\_\_\_  
O = \_\_\_\_\_

Total = \_\_\_\_\_

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

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

$2NaSO_4 =$  \_\_\_\_\_  $\rightarrow$  \_\_\_\_\_

A subscript is a number written after an atom in a formula and indicates the kind in the molecule.

e.g.  $H_2SO_4$  The subscript of H = 2 and the subscript of O = \_\_\_\_\_

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

e.g.,

$2 H_2O$

\_\_\_\_\_ molecules of  $H_2O$   
 \_\_\_\_\_ H (hydrogen)  
 \_\_\_\_\_ O (oxygen)

Total = \_\_\_\_\_

$3 Na_2SO_4$

\_\_\_\_\_ molecules of  $Na_2SO_4$   
 \_\_\_\_\_ Na (copper)  
 \_\_\_\_\_ S (sulphur)  
 \_\_\_\_\_ O (oxygen)

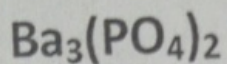
Total = \_\_\_\_\_

$4 Pb(NO_3)_2$

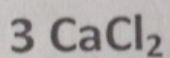
\_\_\_\_\_ molecules of  $Pb(NO_3)_2$   
 \_\_\_\_\_ Pb (Lead)  
 \_\_\_\_\_ N (nitrogen)  
 \_\_\_\_\_ O (oxygen)

Total = \_\_\_\_\_

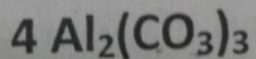
Compounds by using the coefficients and subscripts.



Type of Atom	# of Atoms
Total	



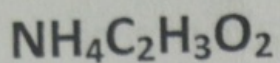
Type of Atom	# of Atoms
Total	



Type of Atom	# of Atoms
<u>Al (aluminium)</u>	<u>8</u>
<u>C (carbon)</u>	<u>12</u>
	20

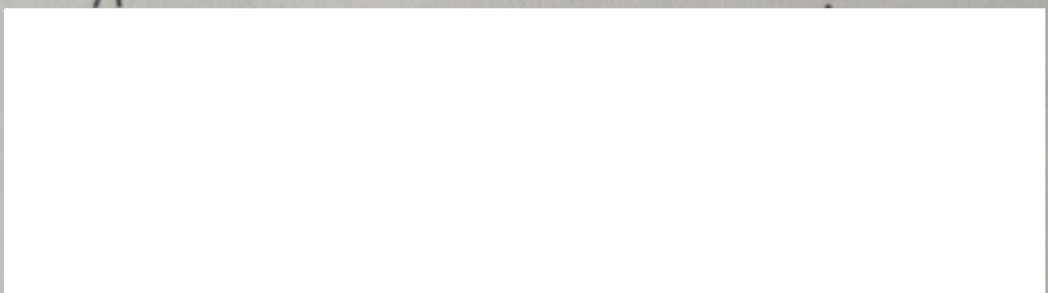
Total

6

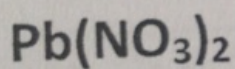


Type of Atom

# of Atoms

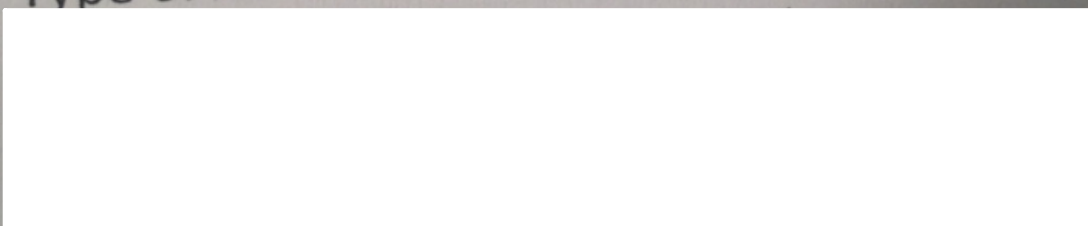


Total



Type of Atoms

# of Atoms



Total



... the Bohr-Rutherford diagram shows the number of protons and neutrons in the nucleus.

Element	Standard Notation	Bohr-Rutherford Diagram
potassium-39 ↑ mass		#p = [redacted] #e = [redacted] #N = [redacted]

