Stoichiometry

1 amu = 1.6606 x 10^{-24} g

The amu mass of an atom of carbon-12 is 12 amu

1 mole = count multiplier = 6.022 x 10^{23} items

subscript to the right of an element symbol = atom
count multiplier = the number of atoms of the
element in a chemical formula

number before chemical formula in a chemical
reaction = formula count multiplier = the number of
formula units required for the balanced chemical
reaction

Recall for compound $M_aA_b$:

\[
\frac{\text{measured mass of atom } M}{\text{measured mass of atom } A} = \frac{a \times \text{atomic weight of } M}{b \times \text{atomic weight of } A}
\]

and can be rearranged to

\[
\frac{\text{measured mass of atom } M}{a \times \text{atomic weight of } M} = \frac{\text{measured mass of atom } A}{b \times \text{atomic weight of } A}
\]

\[
= \text{ moles } M/a = \text{ moles } A/b
\]