

Ratios and Unit Conversions

Conventional Conversion Factor

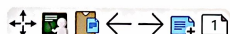
Two related units / same type

$$[1 \text{ yard} = 3 \text{ feet}]$$

$$3.00 \text{ yds} \longrightarrow \text{ft}$$

$$\begin{array}{r|l} 3.00 \text{ yd} & 3 \text{ ft} \end{array}$$

$$\begin{array}{r|l} & 1 \text{ yd} \\ \hline & = 9.00 \text{ feet} \end{array}$$



Conversion Ratio

Two related meas. of same type

$$\begin{array}{c} \text{A} \quad \text{B} \quad (2 \times \text{A}) \quad 2\text{A} = 1\text{B} \\ \hline 3.00\text{A} \longrightarrow \text{B} \end{array}$$

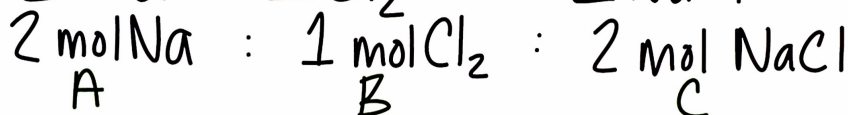
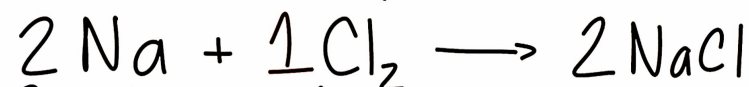
$$3.00\text{A} \longrightarrow \text{B}$$

$$\begin{array}{r|l} 3.00\text{A} & 1\text{B} \end{array}$$

$$\begin{array}{r|l} & 2\text{A} \\ \hline & = 1.50\text{B} \end{array}$$



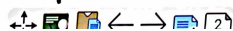
Molar Ratio : Ratio of mol reactants to ($\therefore$) mol product.



$$2 \text{ mol A} : 1 \text{ mol B} : 2 \text{ mol C}$$

Conversion Ratio

$$\left. \begin{array}{l} \text{mol A} \longrightarrow \text{mol B or C} \\ \text{mol B} \longrightarrow \text{mol A or C} \\ \text{mol C} \longrightarrow \text{mol A or B} \end{array} \right\} \text{molar conv.}$$



$$\text{Start mol A} \longrightarrow \text{mol B}$$

$$\begin{array}{r|l} \text{mol A} & \text{ratio mol B} \\ \hline & \text{ratio mol A} \\ \hline & = \text{mol B} \end{array}$$



Stoichiometry

Using molar ratios to get information about relationships in a chem. rxn

