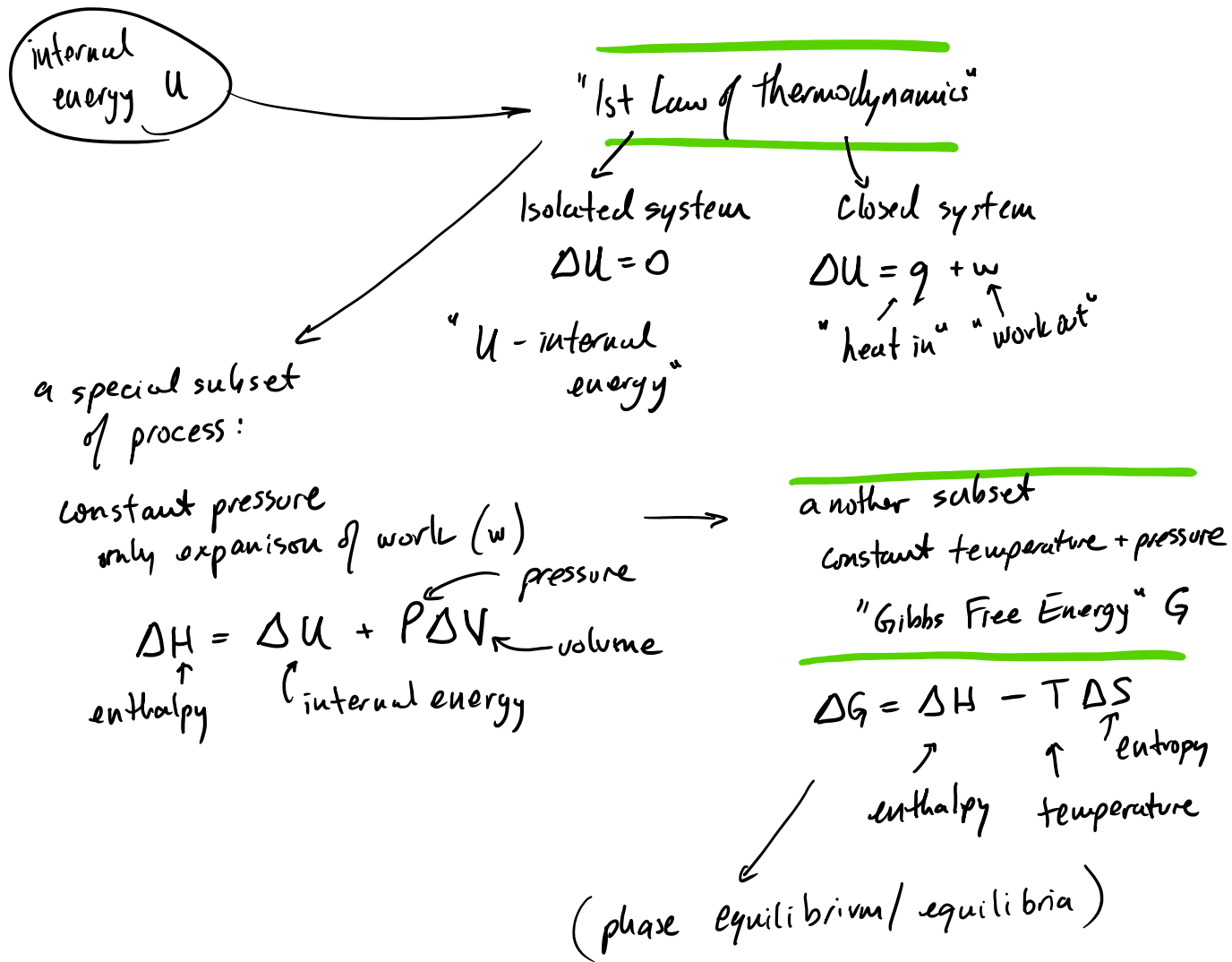


Thermodynamics



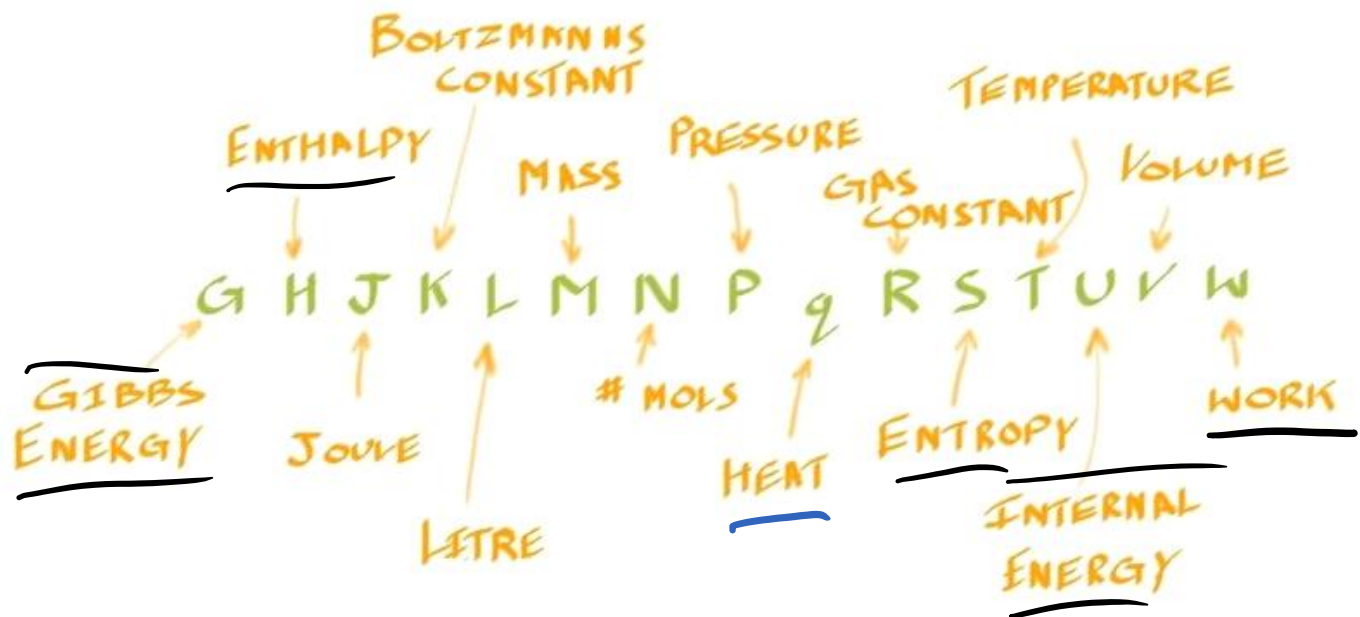


Figure 1. The thermodynamic alphabet.

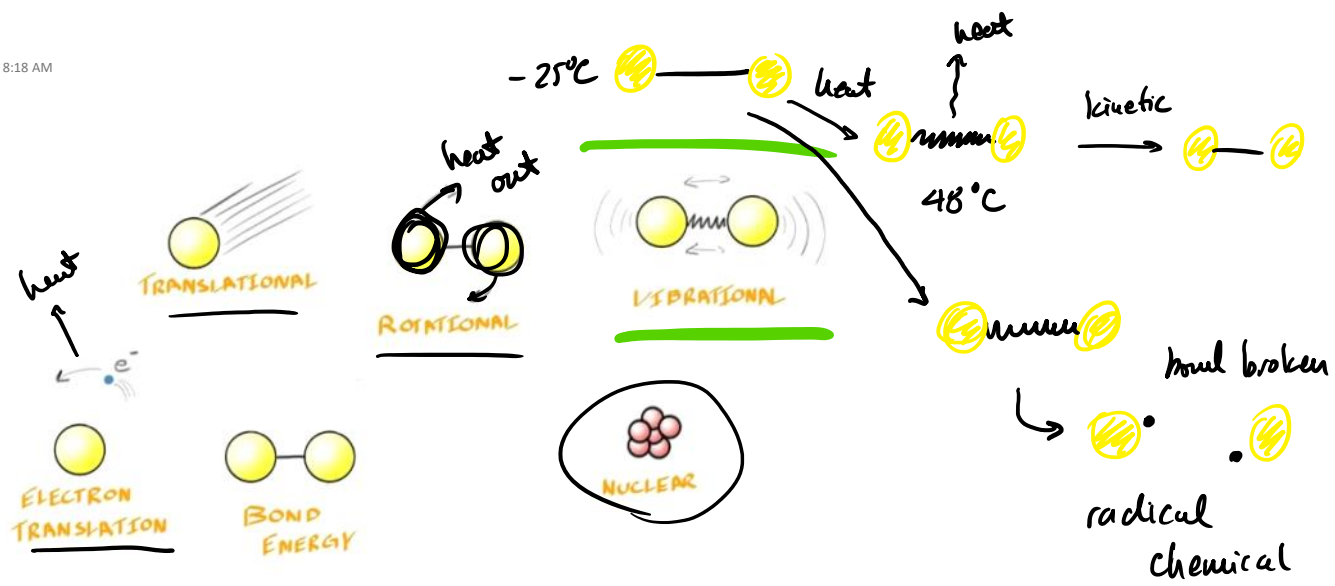
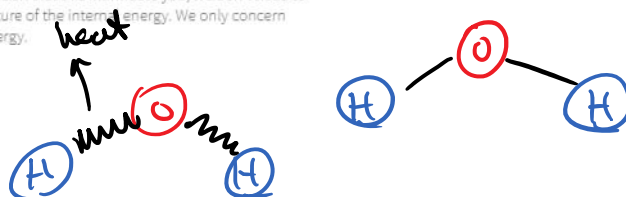
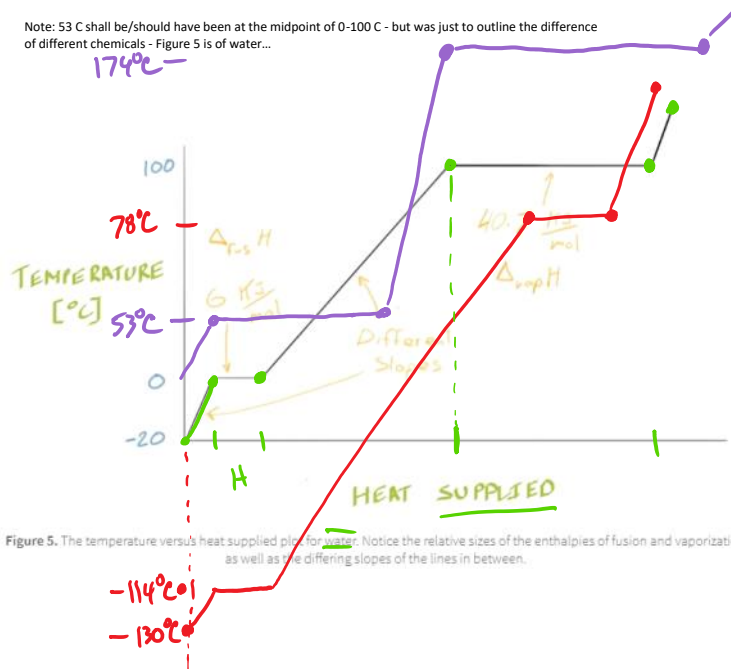


Figure 3. Some of the potential forms of energy contributing to the internal energy. Don't let this intimidate you; we don't need to calculate each of these, and we don't really care especially about the specific nature of the internal energy. We only concern ourselves with changes to the internal energy.



Note: 53 C shall be/should have been at the midpoint of 0-100 C - but was just to outline the difference of different chemicals - Figure 5 is of water...



$$\text{slope} = \frac{\Delta T}{q} \quad \begin{matrix} \text{temperature} \\ \text{heat} \end{matrix}$$

$$q = \frac{1}{\text{slope}} \Delta T$$



1,4-dichlorobenzene
chemical solvent

$$q = n C_p \Delta T \quad \begin{matrix} \text{temperature} \\ \uparrow \quad \uparrow \\ \text{\# mol} \quad \text{molar heat capacity - constant pressure} \end{matrix}$$

$$q = m c \Delta T \quad \begin{matrix} \text{temp.} \\ \uparrow \quad \uparrow \\ \text{mass} \quad \text{specific heat} \end{matrix}$$