

$E = \frac{hc}{\lambda}$ is the energy of a photon (useful for electron-exciting questions)

$$\Delta H = \Delta U + \Delta n_{gases}RT$$

$$q_p = q_v + \Delta n_{gases}RT$$

For constant volume: $\Delta U = q_v$

For constant pressure: $\Delta H = q_p$

Bomb calorimeters are constant pressure, coffee-cup calorimeters are constant volume

$\Delta U = q + W$ (first law of thermodynamics)

$$W = -PV$$

$\Delta S = \frac{\Delta H}{T}$ for phase changes

$\Delta G^\circ = -zFE^\circ_{cell}$ is Gibbs energy of an electrolytic cell

$q = n\Delta H$ when H refers to the enthalpy of a process