

Summary:

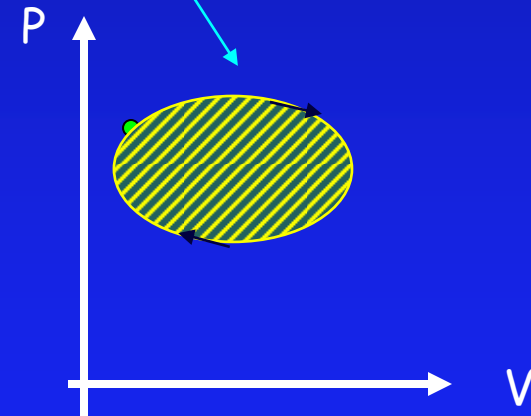
→ 1st Law of Thermodynamics: Energy Conservation

$$Q = \Delta U - W$$

Heat flow into system

Increase in internal energy of system

Work done on system



- point on p-V plot completely specifies state of system ($pV = nRT$)
- work done is area under curve
- U depends only on T ($U = 3nRT/2 = 3pV/2$)
- for a complete cycle $\Delta U=0 \Rightarrow Q=-W$