

# Recap:

→ 1st Law of Thermodynamics

→ energy conservation

$$Q = \Delta U - W$$

Heat flow  
into system

Increase in internal  
energy of system

Work done on system

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

$$\Delta U = 0 \Rightarrow Q = -W$$

