



Energy level

Application of Closed System Energy Balance

- Carefully read the problem statement
- · Evaluate which terms in the energy balance are zero

$$\Delta U + \Delta E_k + \Delta E_p = Q + W$$

- · Write simplified equation
- Plug in known values and solve for desired unknown

Note: The sign in front of the work term is positive in the 4th Ed., but negative in the 3^{cd} Ed.!!! I will use the sign convention in the 4th Ed.

Terms

- Isothermal constant temperature
 - Q may not be zero
 - Example: exothermic reaction, but keep T = constant
- Adiabatic Q = 0 (no heat transferred through boundary)















