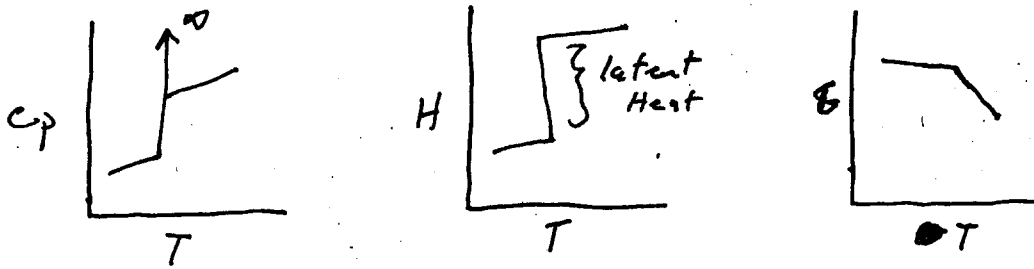
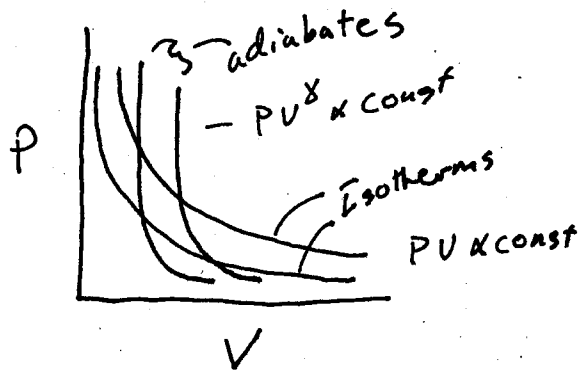


① Sketch C_p , H and G as ~~is a~~ a function of temperature for a 1st order phase transition at T_c .



② Sketch the Isotherms and adiabats for isothermal expansion and adiabatic expansion respectively



③ What is the heat capacity ratio for N_2 gas?

$$\gamma = \frac{C_p}{C_v} = \frac{7}{5}$$

3 translational degrees of freedom
2 Rotational " " "

$$5 \Rightarrow C_v = \frac{5}{2} R \quad C_p = \frac{5}{2} R + R = \frac{7}{2} R$$

④ Fill in the table

Phenomena	FLUX	Gradient
Viscosity	momentum	velocity
Diffusion	material	concentration
Thermal conductivity	heat	temperature.