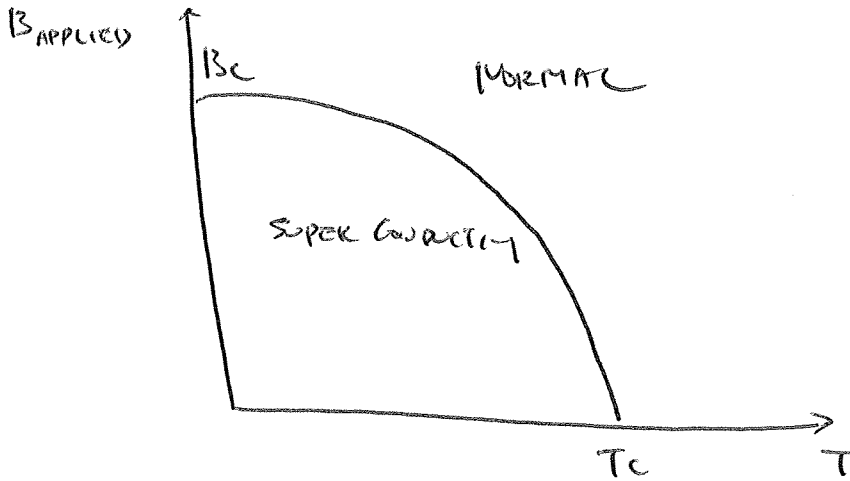
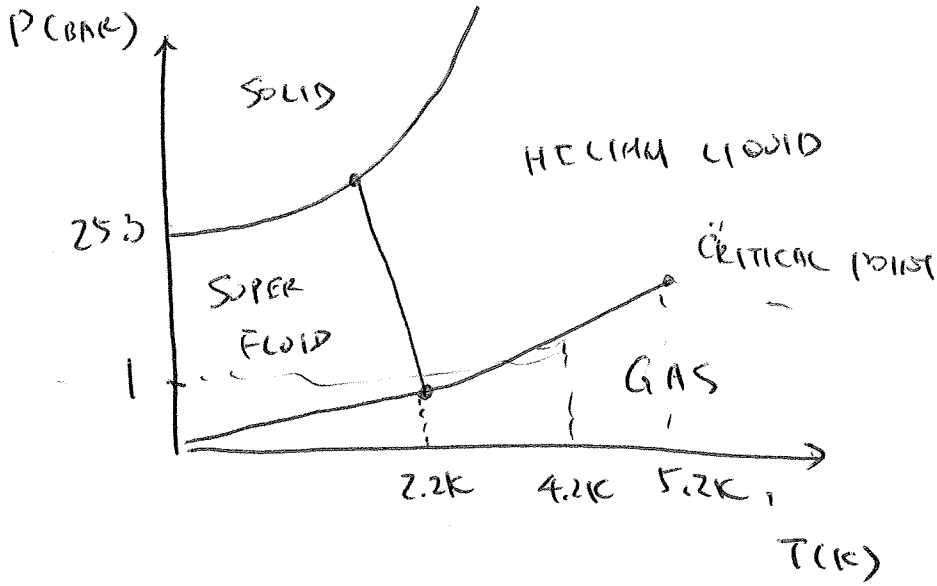
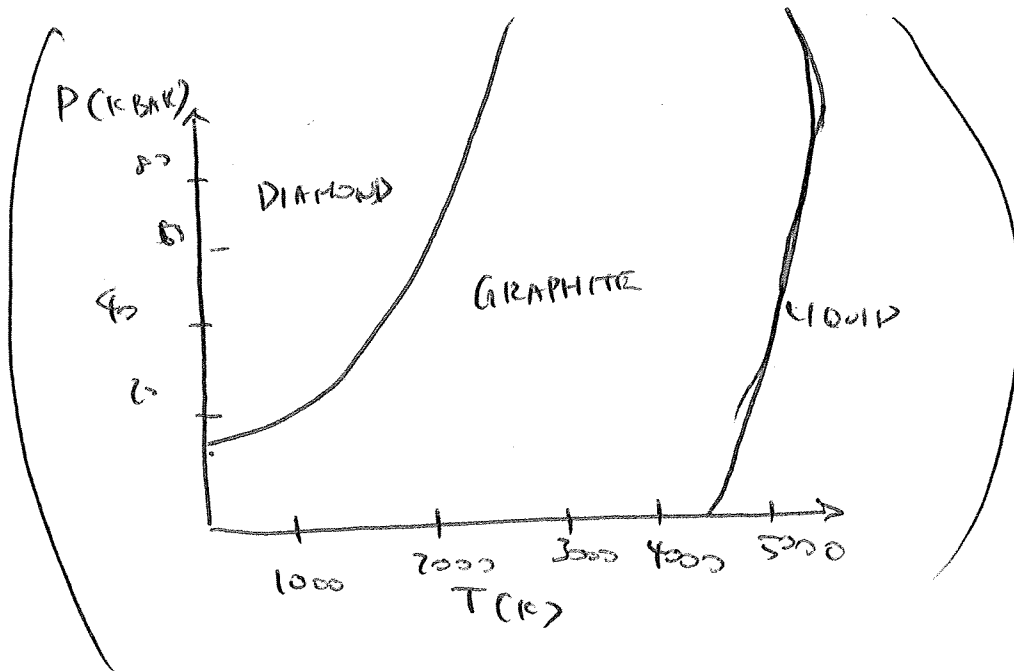
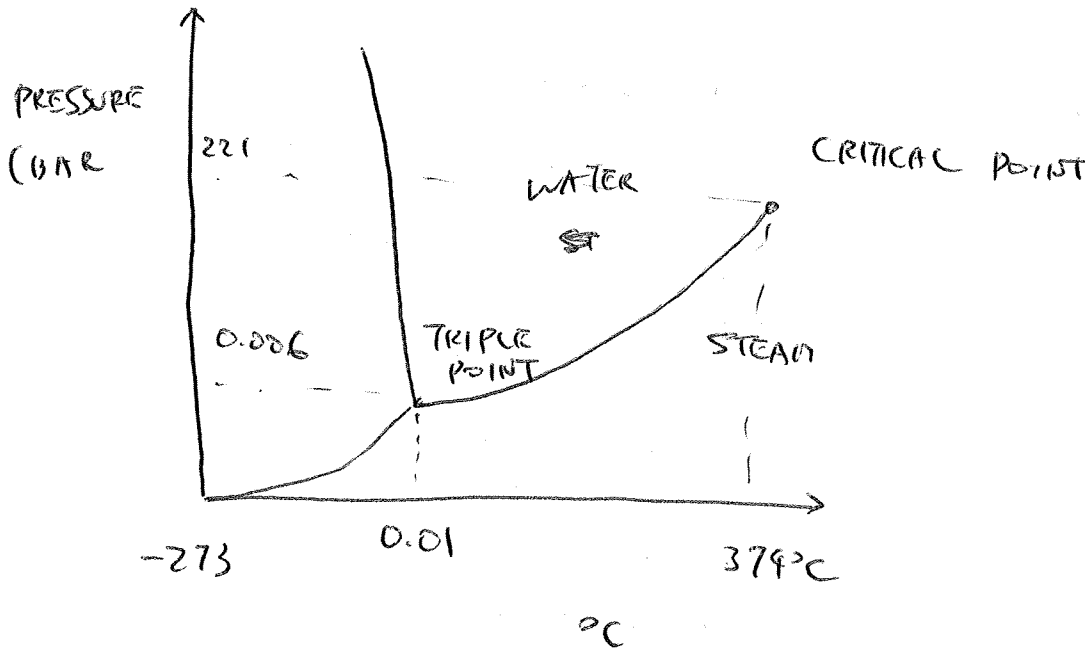


DOSE CONDENSATION



PHASE TRANSITIONS

WATER CAN BE ICE WATER OR STEAM



$$\Delta G = \Delta H - T\Delta S = 0$$

$$\frac{\Delta H}{T} = \Delta S$$

$$\frac{dp}{dT} = \frac{\Delta S}{\Delta V} = \frac{\Delta H}{T\Delta V}$$

$$\Delta H = L \quad (\text{LATEST HEAT})$$

$$dp = \frac{\Delta H}{\Delta V} \frac{dT}{T}$$

$$pV = nRT$$

$$\ln p_2 - \ln p_1 = \frac{\Delta H}{R} \left(\frac{1}{T_1} - \frac{1}{T_2} \right)$$

$$p_2 - p_1 = \frac{\Delta H}{T\Delta V} (\ln T_1 - \ln T_2)$$

$$V_s T = nRT$$

EXAMPLE BENZENE Boiling POINT 353.25 K

$$\Delta H = 30.8 \text{ kJ/mol}$$

WHAT IS VAPOR PRESSURE AT 298 K?

$$\ln p_2 - \ln 101325 = \frac{30.8 \times 10^3}{8.314} \left(\frac{1}{353.25} - \frac{1}{298.15} \right)$$

$$p_2 = 14600 \text{ Pa}$$

$$dG = -SdT + vdp + \mu dn$$

$$\left(\frac{\partial G}{\partial p}\right)_{T, n} = v$$

