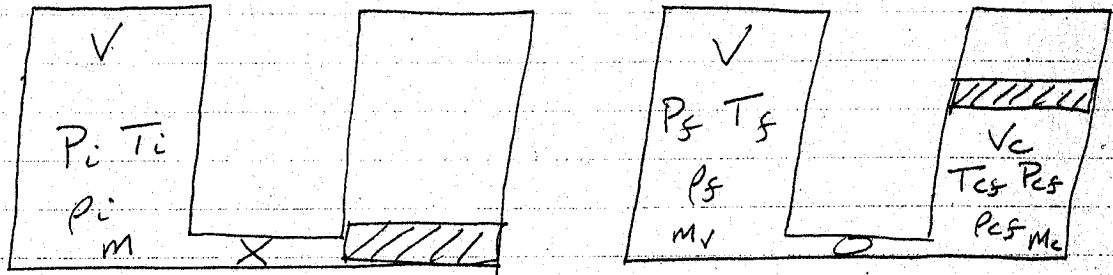


2.8



in left chamber mass transfer out of chamber but no heat transfer \Rightarrow perfect gas

$$\frac{P_f}{P_i} = \left(\frac{P_f}{P_i} \right)^{\gamma} \quad \frac{P_f}{P_i} = \left(\frac{T_f}{T_i} \right)^{\frac{\gamma}{\gamma-1}} \quad \dots$$

mass balance

$$m = m_f + m_c$$

in all cases

$$P = \rho R T \quad m = \rho V$$

\Rightarrow

$$P_i V = P_f V + P_{c,f} V_c$$

$$\rho = \frac{P}{RT}$$

$$\frac{P_i}{T_i} V = \frac{P_f}{T_f} V + \frac{P_{c,f}}{T_{c,f}} V_c$$

$$\frac{P_i}{T_i} = \frac{P_f}{T_f} + \frac{P_{c,f}}{T_{c,f}} \frac{V_c}{V}$$