the same state and analysis are also proved the same state of	Raunak Manji Problem Set 4
The statement of the same of t	Problem Set II
	Analytical Problems:
,	i. The reversible purches for entropy transfer takes place by heat interactions
Condition (Condition of Condition of Conditi	
Married Street, Street	$\Delta S = dqVA$
	The Chalie hadie amount delice is
,	The adiabatic process defines the system is closed and no heat will enter the system q 20
111	The noversible advobatic process is $\Delta S = D$
	2 a. The values of AH, AS, AU is zero since it is a state
les.	Bundlin and cuche accourse
1	function and cyclic processes. $\Delta U = O \Delta H = O \Delta S = O$
	b. The process b . c and of a are adiabatic process q=0
	The appearance of the demonstration is constraint there are all = 0
	The work close by the system is carried but by heat supplied
C. The special and the second	La TIA A COLLA LAMIN ALIA ALIA ALIA ALIA ALIA ALIA ALIA AL
	$W = -nRTh(\ln Vb) \Delta U = 0 = q + w q + w = (nRTh(Vb))$ $0 = nRTh(Vb) \Delta U = 0 = q + w q + w = (nRTh(Vb))$
	Of = nR The ln (Vb) Va)
	(Va)
	c. The total work done is negative.
	112 and + Was + Was 1 was
and the same of th	Whet = Was In (Ya) In (Ya) In (Ya)
1101	(The Tine In (Nb))
	Whet = - (The Time in (Vba))
1	another done by the heat engine = -w
	d. Efficiency (11) = hard absorbed by heat engine
11111	Th-Tc = 1-10
de la constitución de la constit	$= \left[- \left(\frac{Th - Ic}{NR} \right) \frac{R}{R} \right] = \frac{Th}{R} \frac{Thot}{R}$
and the second section of the section of t	d. Efficiency (n) = network done by the heat engine = -w - [- (Th-Tc) n RTln (vb) va)] = Th-Tc = 1-Tcc - The Theorem of the region of the transfer of the tr
and the second s	

Rawak Warji Problem Set 4 S = (P,T) $dS = \left(\frac{\partial S}{\partial \rho}\right) + d\rho + \left(\frac{\partial S}{\partial \tau}\right) \rho d\tau$ Maxwell's Relation $\left(\frac{\partial S}{\partial P}\right)_T = -\left(\frac{\partial V}{\partial T}\right)_P = -\beta V$ $dS = \frac{CP}{T} dT - \left(\frac{\partial V}{\partial T}\right) dp \text{ where } B = \frac{1}{V} \left(\frac{\partial V}{\partial T}\right) p \partial P o = -\frac{1}{V} \left(\frac{\partial V}{\partial P}\right) T$ D. OS = CP dT-BVdP | AS = 5 T2 CP dT - 5 BVdp IN THOROUGH DO DOF DO DO DO FOR THE DAY Dut 1 100 borres a conspectation of the son of 1.a. A Hrxn = S AH product - E AH reactants - 12+8-3947 -12+37 | AHrxn = -763 x 1 mol -DS rxn = [Sproducts - [Sreadants > [192+16/+213] -[209] = [357 J/mo1k] - D Sour = - (-763) - 2.56 x 103 J/mo1k - DS univ. = D Srxn + DS surr = 357 + (2.56x103)= 2917 J/mo1x MINEROLD LINE HE AND AND THE ME STONE OF THE This action is spontaneous because the value of asiniv)0.

2. ΔH m (78.3C) = ΔVap Hm 25°C+ (351.3k) ΔCpdT-1 D Cp = Cp(product) - Cp(tractants) $\Rightarrow Cp - Cp' = (65.6 + 2.38 \times 10^{-4}) - (112)$ $351.3k = 46.4 + 2.38 \times 10^{-4} T$ $98k = \int (-46.4 + 2.38 \times 10^{-4}) dT$ -46.4[T]298t + 2.38 x 10-4 [T2]298 - 46.4 (351.3-298) + 1.19 ×10-4 [(351.3)2- (298)2] -2475.17 + 1.19 x10-4 [123411.69 - 884 04] - 2473,12 + 4,11813 -2469 5/mol = -2.469 k 5/mol [1k] = 10005] Δ Vap Hm = (78,3°C) = Δ Vap Hm (25°C) + (351.3k) Cp d.T = 42.3 kJ/mol - 2.469 kJ/mol V298k Vap HM = (78.3°C)= 39.831 Kg/mol S vap HM (78.3°C) = D Vap Hm (78.3°C) 39.831 RJ/mal TB (ln K) 351.3K = 113.38 7 mol 3. DH = TAS $\Delta S_{70k} - 150k = \left(\frac{\Delta H_2}{T_2}\right) - \frac{\Delta H_1}{T_2}$ 4450.0 <u>6815.0</u> 54.39 90.2 $81.81 - 75.55 = 6.265k^{-1}$ 1 S = 16.265k-1 70K +50K