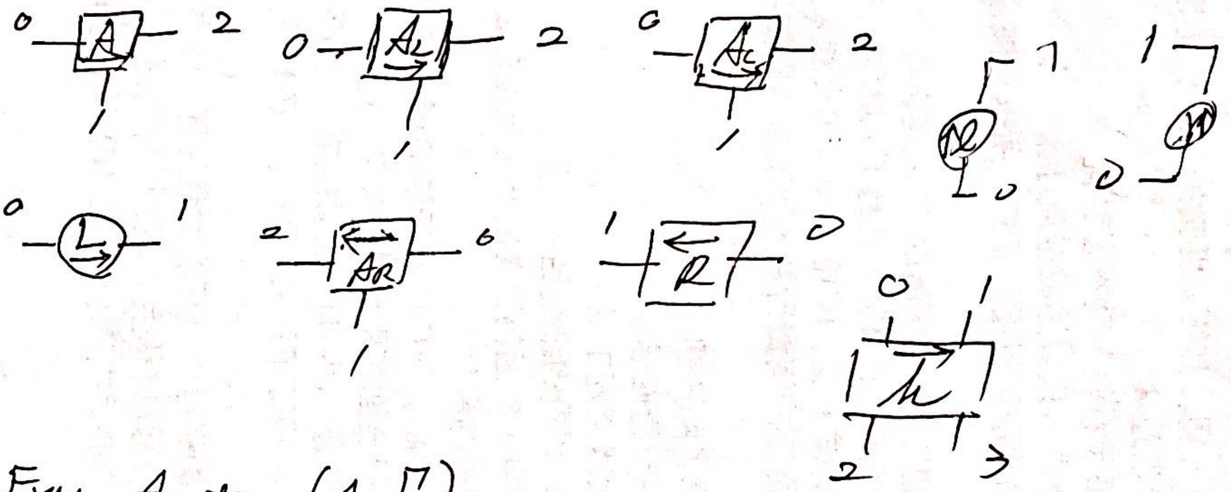
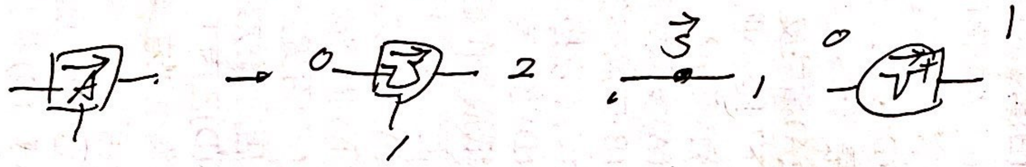
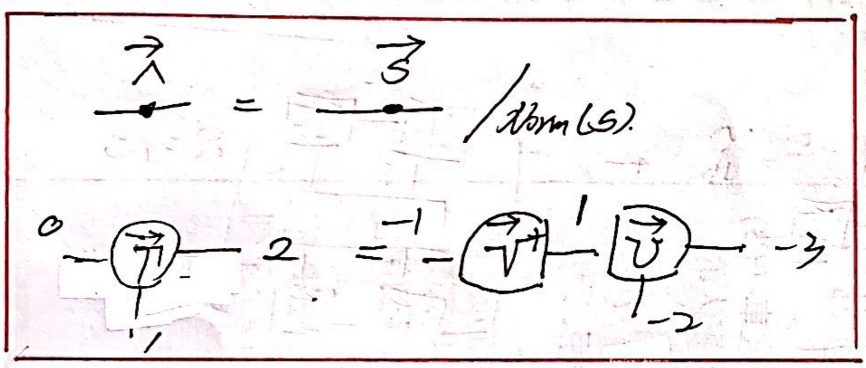
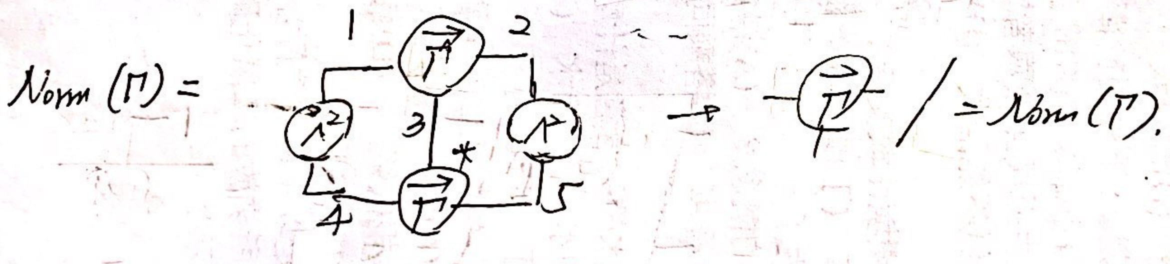


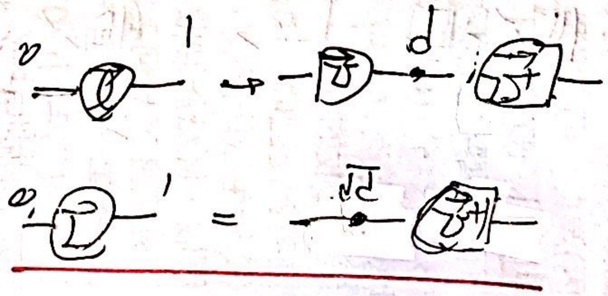
From A to (Λ, Γ).

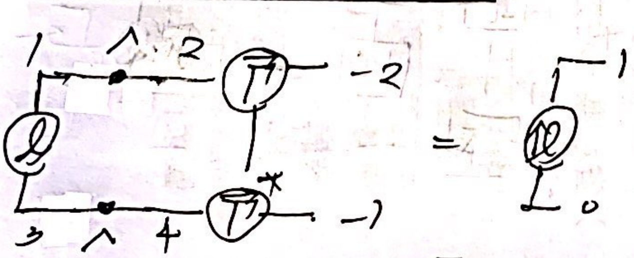


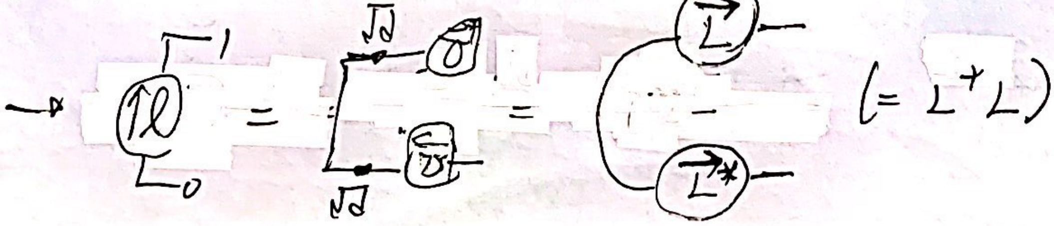


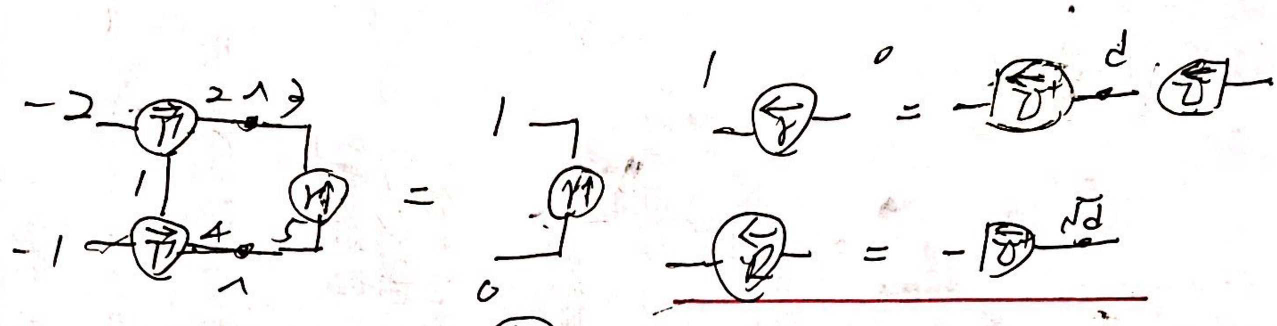


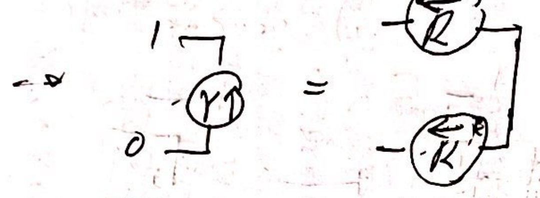
From (Λ,Γ) to Canonical.



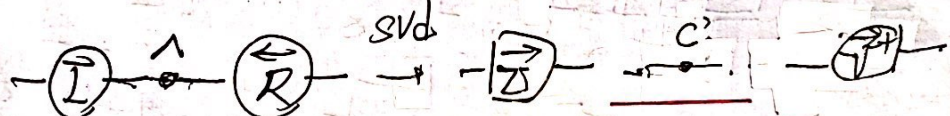




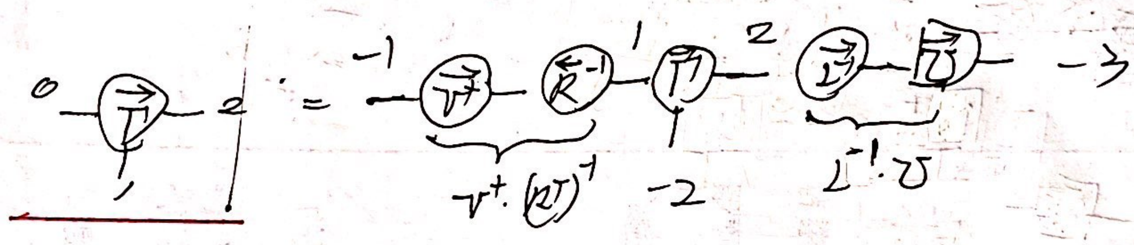




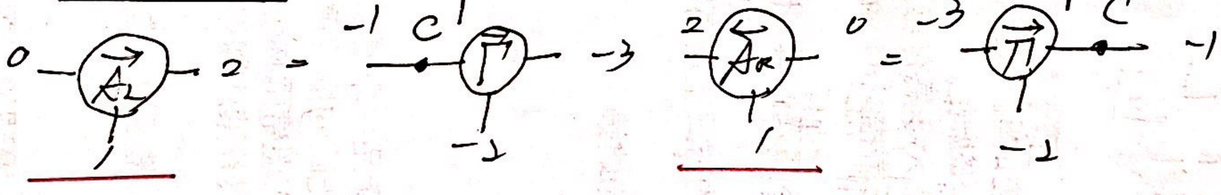
$(= R^{\dagger} R)$



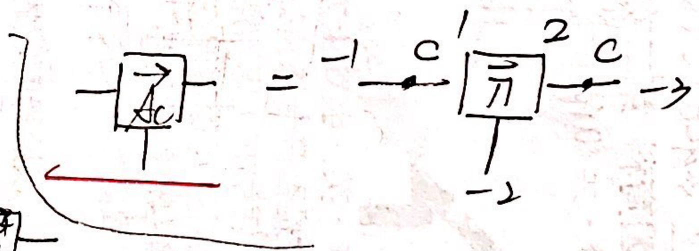
$(L \Lambda R^{T})$

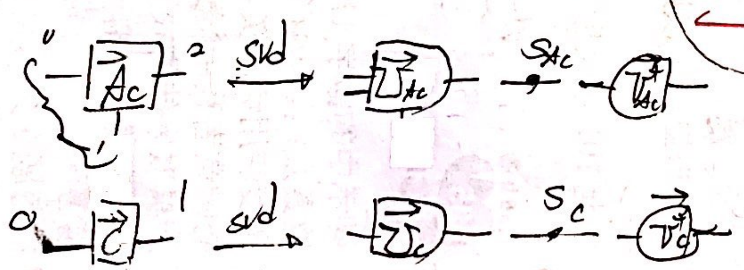


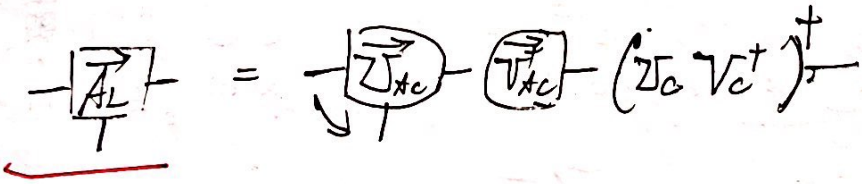
A_L & A_R

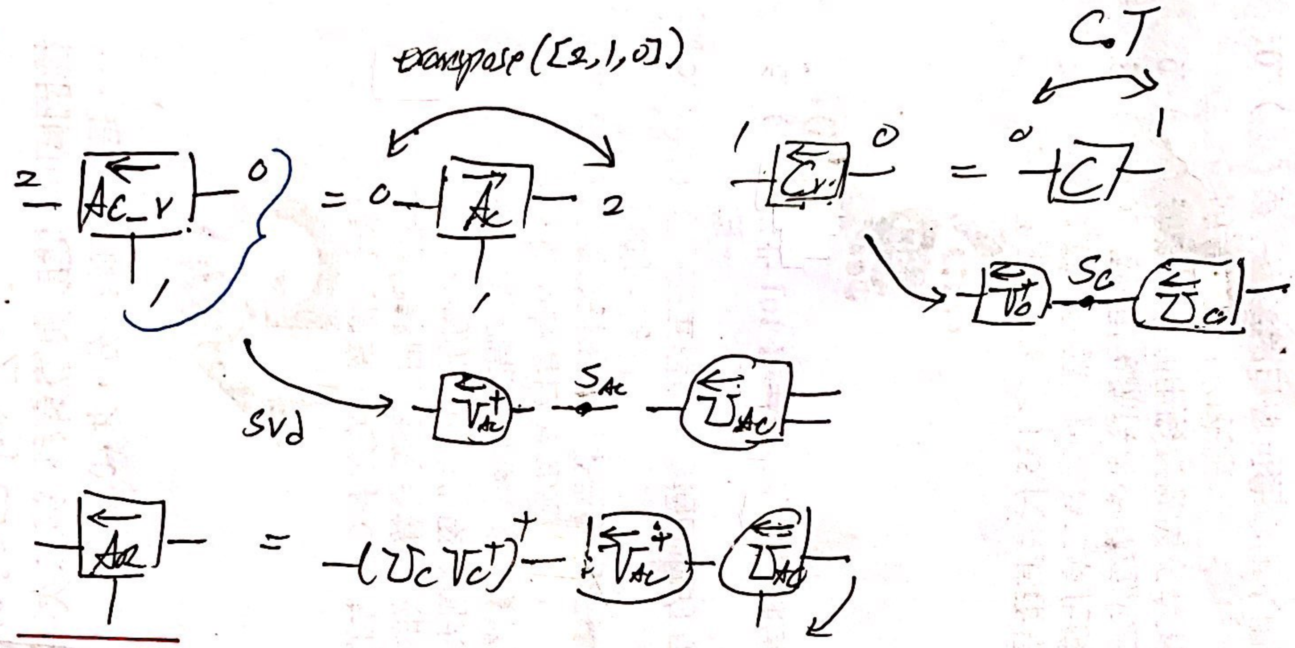


From (A_L, A_R) to (A_C, C)

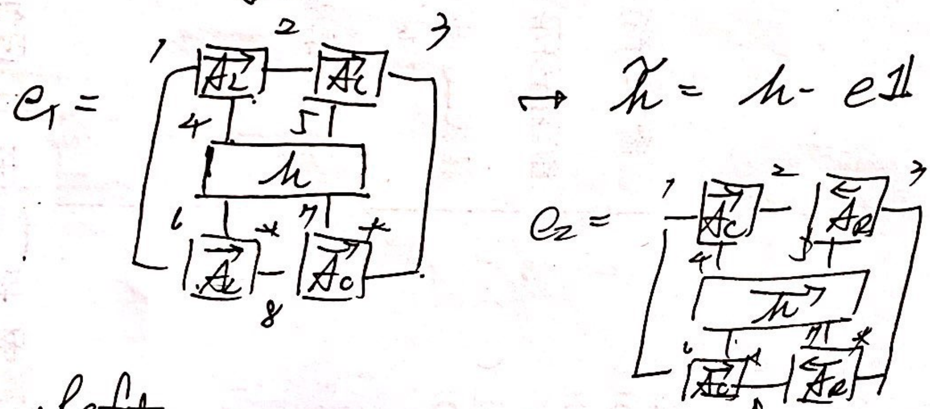




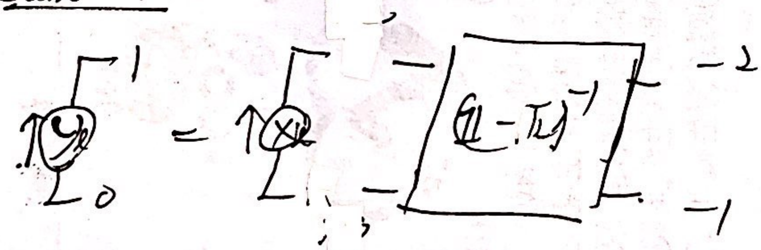




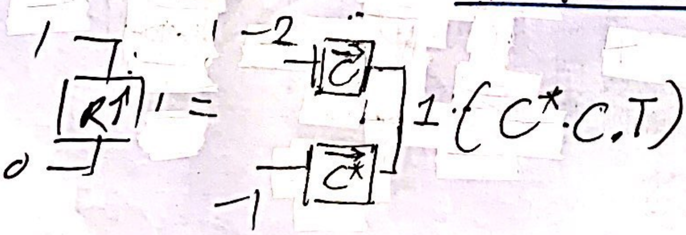
Evaluate Energy



Sumleft.

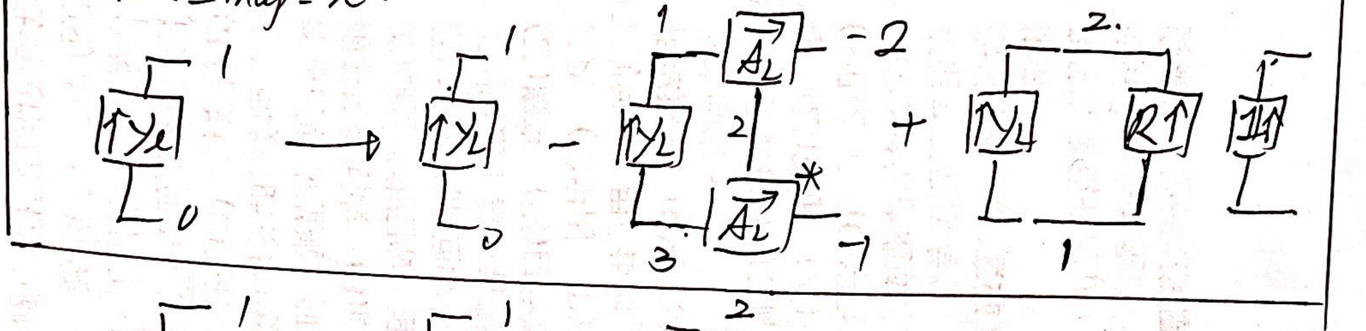


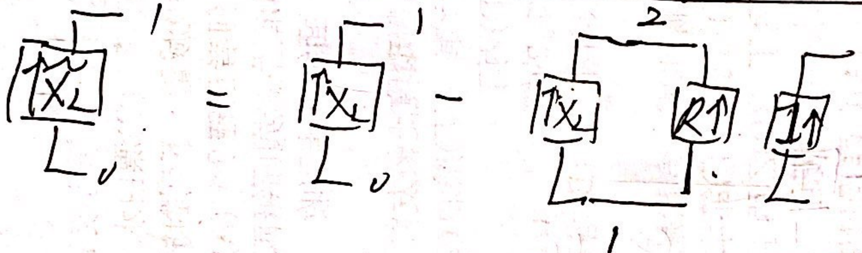
What we want is: $\langle y_L | (\mathbb{1} - T_L + |R\rangle\langle \mathbb{1}|) = \langle x_L | - \langle x_L | R \rangle \langle \mathbb{1} |$



$\rightarrow \langle y_L | A = \langle \tilde{x}_L |$

transfer_map_l:

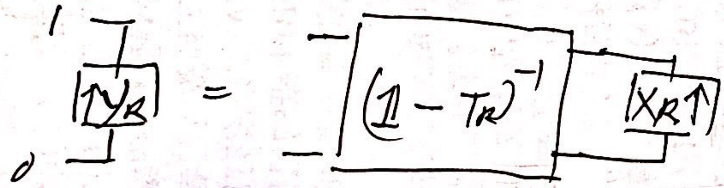




$\rightarrow \quad \underset{\text{known}}{\langle y_L | \underline{A}} = \underset{\text{known}}{\underline{\langle \tilde{x}_L |}}$ solve $\langle y_L |$!

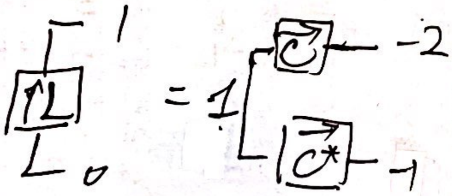
(y_L, = bicgstab (map, $\tilde{x}_L$))

Sum_Right.



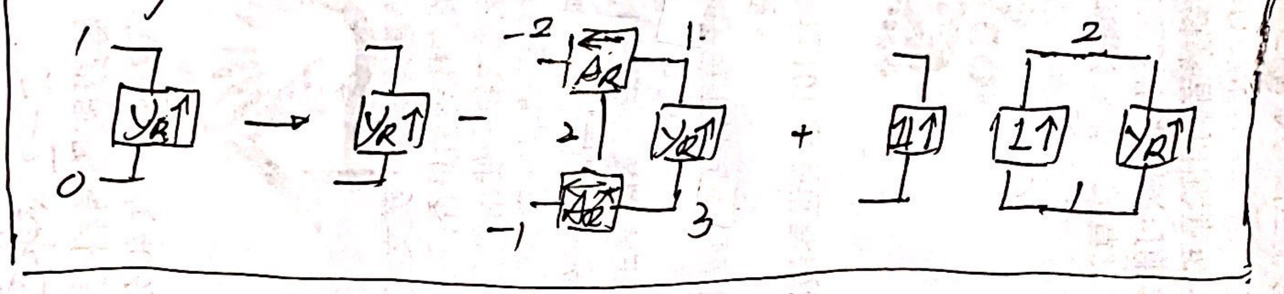
We want: $(\mathbb{1} - T_R + |\mathbb{1}\rangle\langle L|)\,|y_R\rangle = |x_R\rangle - |\mathbb{1}\rangle\langle L | x_R\rangle$

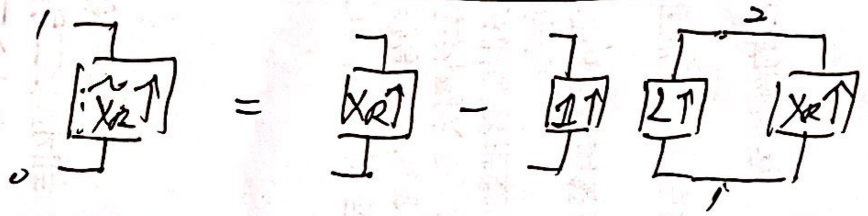
$= |\tilde{x}_R\rangle.$



$(= c^\dagger \cdot c)$

← map:

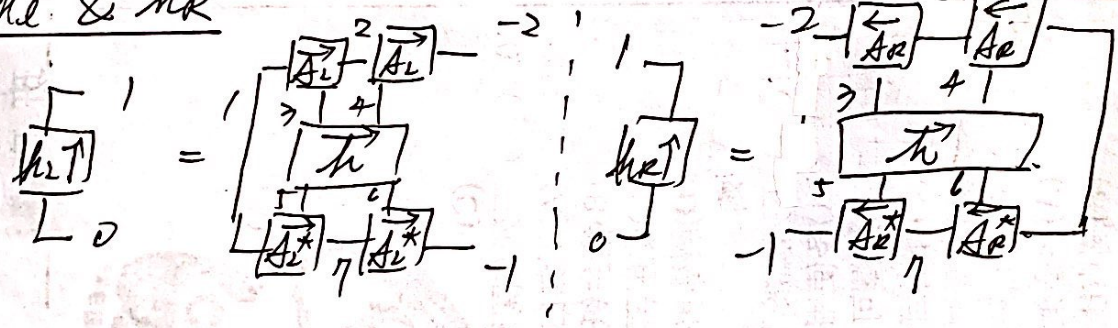




→ $A|y_R\rangle = |\tilde{x}_R\rangle$. (y_R, = bicgstab (map, $\tilde{x}_R$.))

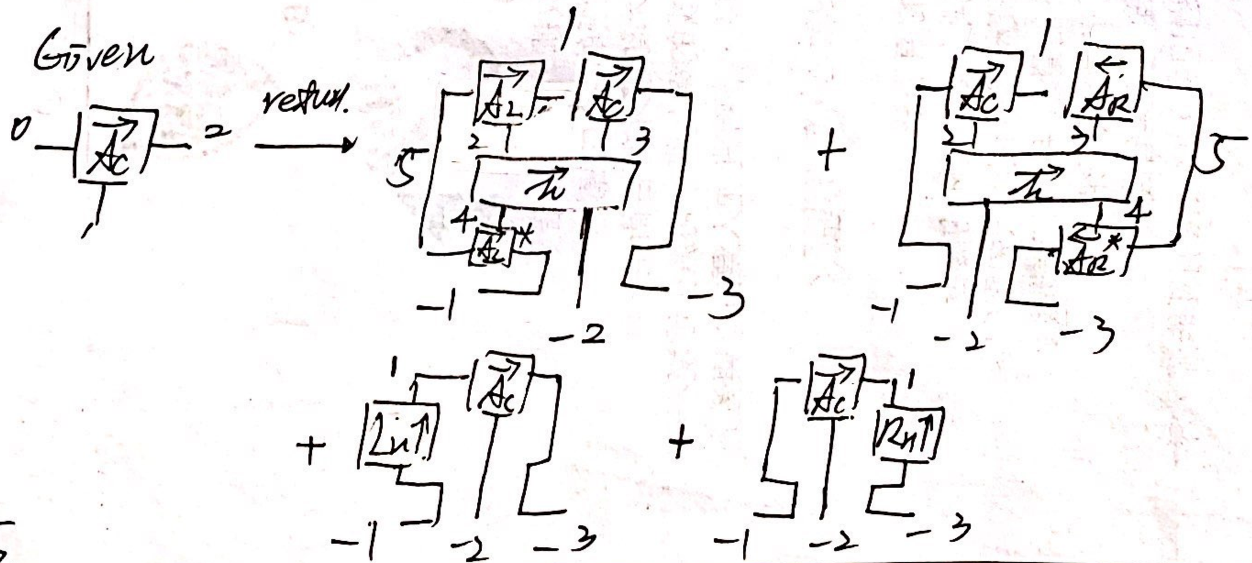
solve

h_L & h_R



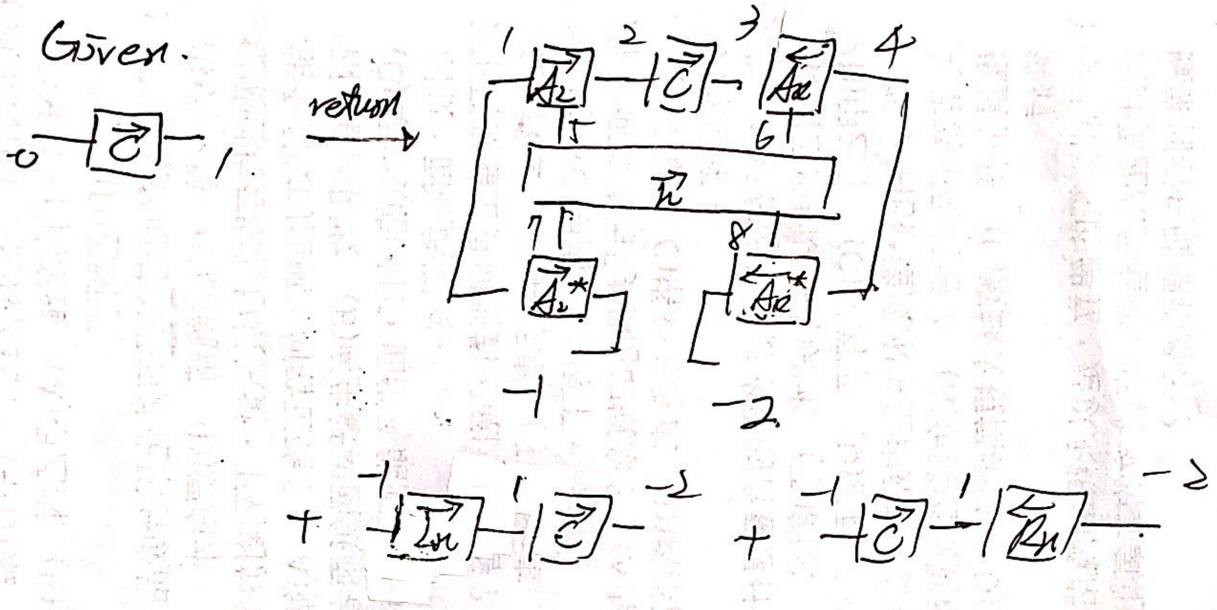
$X \to H_{AC}(X)$

Given



$\vec{X} \to H_c(x)$

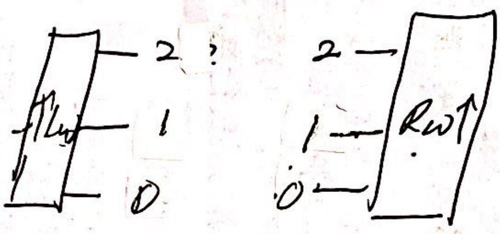
Given.

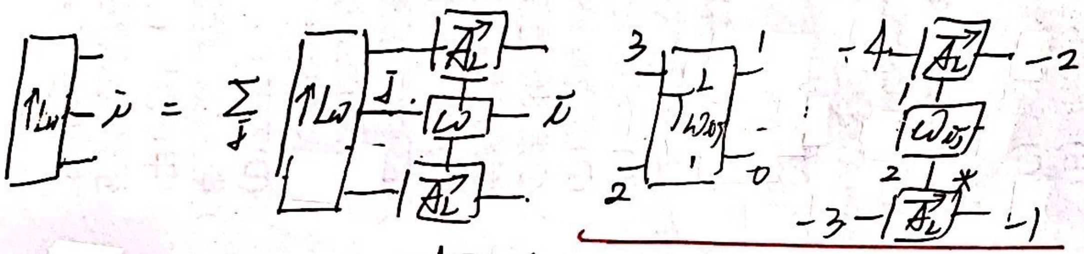


MPO — vumps

get L_W & R_W

$$
W = \begin{bmatrix} \mathbb{1} & 0 & 0 & 0 \\ W_{10} & 0 & 0 & 0 \\ W_{20} & W_{21} & 0 & 0 \\ W_{30} & W_{31} & W_{32} & \mathbb{1} \end{bmatrix}.
$$





$\Rightarrow L_W[3] = \sum_j L_W[j]\, T_W^L[j,3]$

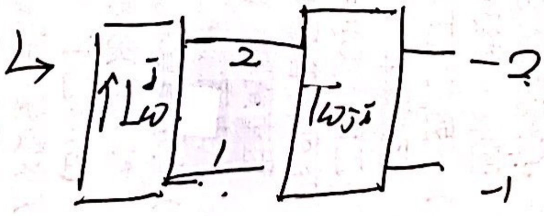
$= L_W[3]\, T_W^L[0,3] = L_W[3]\, T_{\mathbb{1}}^L \to L_W[3] = \mathbb{1}.$

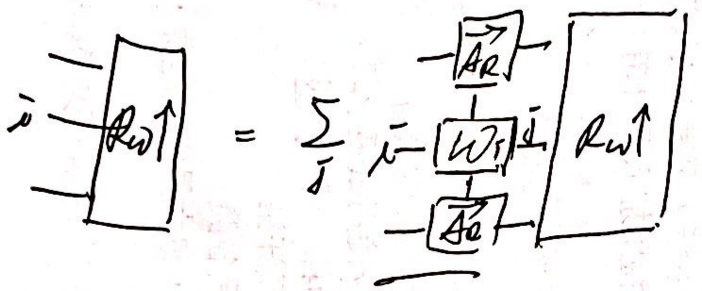
$L_W[2] = L_W[3]\, T_W^L[3,2]$, $L_W[1] = L_W[2]\, T_W^L[2,1]$

$+ L_W[3]\, T_W^L[3,1].$

$L_W[0] = L_W[0] \cdot T_W^L[0,0] + \sum_{j>0} L_W[j]\, T_W^L[j,0].$

$\to L_W[0] = \left(\sum_{j>0} L_W[j]\, T_W^L[j,0]\right)\left(\mathbb{1} - T_W^L\right)^{-1}$

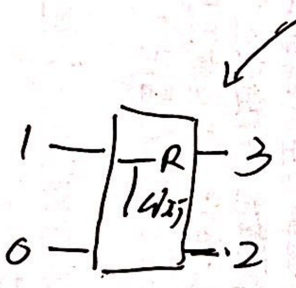


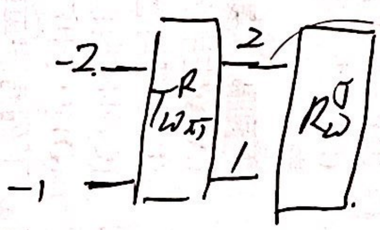


$$\to R_W[i] = \sum_j T_W^R[i,j] \cdot R_W[j].$$

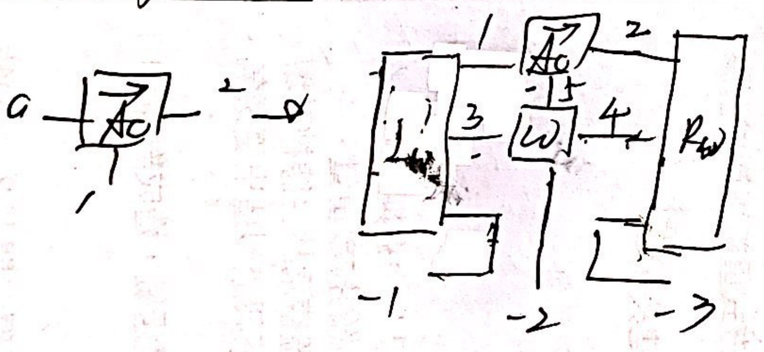
$$\to R_W[i] = \mathbb{1}.$$

$$R_W[i,0] = \sum_{j<i} T_W^R[i,j]\, R_W[j].$$





map_HAC.



map_HC