$$a) \ \operatorname{rand}(\hat{\sigma}), \mathcal{T}_{\hat{\sigma}} \neq 0 \qquad b) \qquad \prod_{\substack{i_0 \ \sigma_1 \ \sigma_2 \ j_3 \ \sigma_3}} \qquad \sigma_{\mathcal{L}}$$

$$\mathcal{I}_{\ell} = \{(\hat{\sigma}_1, \dots, \hat{\sigma}_{\ell})\} \qquad \forall \ell \qquad \qquad \prod_{\substack{i_0 \ \sigma_1 \ j_2 \ i_1 \ \sigma_2 \ j_3 \ \sigma_3 \ \dots \ \sigma_{\mathcal{L}}}} \qquad \mathcal{I}_{1} \rightarrow \mathcal{I}_{1}, \mathcal{I}_{2} \rightarrow \mathcal{I}_{2}$$