FCI Questions

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1 two differences

$$\langle \Psi | V | \Psi(k \to k', l \to l') \rangle = v^{\alpha\beta\gamma\delta} \, (-1)^{\varepsilon\left(\kappa_1,\ldots,\kappa_i',\ldots,\kappa_j,\ldots,\kappa_n\right)} \tag{1}$$

$$\langle 0 | \left(\prod_{\kappa=(\kappa_n \ldots \kappa_3)} a_\kappa \right) a_2 a_1 a_\alpha^\dagger a_\beta^\dagger a_\gamma a_\delta a_{1'}^\dagger a_{2'}^\dagger \left(\prod_{\kappa'=(\kappa_3 \ldots \kappa_n)} a_{\kappa'}^\dagger \right) | 0 \rangle \tag{2}$$

$$= [mp|nq] - [mq|np] \tag{3}$$

$$= (mp|nq)\delta_{[m][p]}\delta_{[n][q]} - (mq|np)\delta_{[m][q]}\delta_{[n][p]} \tag{4}$$