

# FCI Questions

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## 1 two differences

$$\langle \Psi | V | \Psi(k \rightarrow k', l \rightarrow l') \rangle = v^{\alpha\beta\gamma\delta} (-1)^{\varepsilon(\kappa_1, \dots, \kappa'_i, \dots, \kappa_j, \dots, \kappa_n)} \quad (1)$$

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

$$= [mp|nq] - [mq|np] \quad (3)$$

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