**Algunas fórmulas para grupos finitos que quizás os sirvan de ayuda**

$$\frac{1}{|G|}\sum_{g} D^{\rho}_{ij}(g)\bar{D}^{\rho'}_{i'j'}(g) = \frac{1}{d_\rho}\delta_{\rho,\rho'}\delta_{i,i'}\delta_{j,j'} \quad , \quad |G| = \sum_{\rho} d_\rho^2$$

$$\frac{1}{|G|}\sum_{\rho} d_\rho \sum_{ij} D^{\rho}_{ij}(g)\bar{D}^{\rho}_{ij}(g') = \delta_{g,g'}$$

$$f(g) = \sum_{\rho} d_\rho \sum_{ij} D^{\rho}_{ij}(g) f^{\rho}_{ij} \quad , \quad f^{\rho}_{ij} = \frac{1}{|G|}\sum_{g} \bar{D}^{\rho}_{ij}(g) f(g)$$

$$\frac{1}{|G|}\sum_{i} |\mathcal{C}_i| \chi^{\rho}_i \bar{\chi}^{\rho'}_i = \delta_{\rho,\rho'} \quad , \quad \frac{|\mathcal{C}_i|}{|G|}\sum_{\rho} \chi^{\rho}_i \bar{\chi}^{\rho}_j = \delta_{i,j}$$

$$\chi^{\sigma}\chi^{\tau} = \sum_{\rho} m^{\sigma\tau}_{\rho}\chi^{\rho} \quad , \quad m^{\sigma\tau}_{\rho} = \frac{1}{|G|}\sum_{i} |\mathcal{C}_i| \chi^{\sigma}_i \chi^{\tau}_i \bar{\chi}^{\rho}_i$$