0.1. Decompose the internal tensor product $\mathcal{H}_m \otimes \mathcal{H}_k$ as a direct sum of irreducible components.

0.2. Compute $E_{\pm}(X^k Y^{n-k})$ in $\mathcal{H}_n$.

0.3. Prove that the irreducible representation of of $SU(2)$ of highest weight $m = 1$ is equivalent to the adjoint representation of $SU(2)$ on $\mathfrak{sl}(2, \mathbb{C})$.

0.4. Compute $R_+(E_+)$ on $C^\infty(S^3)$ (i.e. justify the formulas of 5.3.2 in the notes).