

- We wish to prove

$$\varepsilon^{ijk} \varepsilon_{pjq} = 2 \delta^i_p$$

- From we know

$$\varepsilon^{ijk} \varepsilon_{pqk} = \delta^i_p \delta^j_q - \delta^i_q \delta^j_p$$

- to get what we want multiply both sides by  $\delta^q_j$

$$\varepsilon^{ijk} \varepsilon_{pqk} \delta^q_j = (\delta^i_p \delta^j_q - \delta^i_q \delta^j_p) \delta^q_j$$

$$\begin{aligned} \Rightarrow \varepsilon^{ijk} \varepsilon_{pjk} &= \delta^i_p \delta^j_j - \delta^i_j \delta^j_p \\ &= 3 \delta^i_p - \delta^i_p \\ &= 2 \delta^i_p \end{aligned}$$