Deadline: September 29th

Let $\mathcal{H}_4$ be the set of 4×4 Hermitian matrices. Consider

$$M = \big\{A \in \mathcal{H}_4 \ : \ A \text{ has two distinct eigenvalues of multiplicity } 2\big\}$$

(in other words, $\lambda_1 = \lambda_2 \neq \lambda_3 = \lambda_4$). Compute the dimension of M.

<u>Note</u>. You are expected to proceed as in the lecture: using intuitive (but correct!) arguments counting degrees of freedom without entering in coordinate charts.