ASSIGNMENT 2
DUE THURSDAY FEBRUARY 12

(1) Recall the Hermitian orbit $F^{\underline{\lambda}}$ defined in class. When $\underline{\lambda} = (\lambda_1, \ldots, \lambda_n)$ and the λ_i are distinct, we showed that $F^{\underline{\lambda}}$ is diffeomorphic to the flag manifold.
Give a flag-like description of $F^{\underline{\lambda}}$ when the points are not necessarily distinct.
What is the dimension of $F^{\underline{\lambda}}$?
(2) Prove the original Moser's theorem:
If M is compact oriented manifold and η_0, η_1 are two volume forms with the same volume, then there exists a diffeomorphism $\phi : M \to M$ such that $\phi^* \eta_1 = \eta_0$.
Use this result to classify symplectic forms on compact 2-manifolds.
(3) Do Homework 8, question 2 in da Silva.