

Homework #2 Math 518

Due in class Wednesday, September 7, 2011

1. Define the complex projective space $\mathbb{C}P^{n-1}$ to be the set of complex lines through the origin in \mathbb{C}^n and prove that it is a manifold. What are the coordinate charts? Transition maps?
2. If M and N are manifolds, show that $M \times N$ is diffeomorphic to $N \times M$. What is the diffeomorphism in question?