MATH 8702
Additional Problems for Homework Assignment #3
Due 03/01
INSTRUCTOR: Anar Akhmedov

1. Prove that the complex plane slit along the union of rays $\bigcup_{k=1}^{n}\{A_k + iy\colon A_k$ is real and $y \leq 0\}$ is simply connected.

2. Prove that the function u defined by $u(x, y) = Re(\frac{i+z}{i-z})$ and $u(0, 1) = 0$ is harmonic in the unit disc and vanishes on its boundary.