MATH 502, Spring '97 Homework 2 Arnold

§III.1: 6 (for (c) the coefficient should be n^k, not k^n)

§III.2: 6, 10, 16

§III.3: 3, 18

Use the Cauchy–Riemann equations to prove that (1) if the real part of an analytic function is constant on a region, then so is the function, and (2) if the absolute value of an analytic function is contant on a region, then so is the function.

Find conformal maps of the unit disc onto each of the following regions: (1) the right half plane; (2) $\mathbb{C} \setminus \{x : x \le 0\}$; (3) $\mathbb{C} \setminus \{x : -1 \le x \le 1\}$.