Set Theory – Spring 2003 – Homework 2

Name:
Due February 17

1. Compute $\aleph_1^{\aleph_1}$, $\aleph_1^{\aleph_0}$, $|A|$, where

$$A = \Big\{ f : \mathbb{R} \to \mathbb{C} \Big| f \text{ is continuous} \Big\}.$$

2. Invent (and justify) wellorderings of the natural numbers of type $\omega \cdot 3$, $(\omega \cdot \omega) + 1$ and $\omega^\omega + \omega$.

3. Let $A \subset \mathbb{R}$ be such that $<_{\mathbb{R}} \cap A^2$ well orders A. Prove that $|A| \leq \aleph_0$.