## MAT511 homework, due Nov 19, 2003

(1) Prove that the two intervals $(0,1)$ and $(-47,47)$ have the same cardinality.
(2) Prove that if $A$ is an infinite set and $A \subseteq B$, then $B$ is an infinite set.
(3) Let $3 \mathbb{N}$ be the set of naturals that are multiples of 3 , that is $3 \mathbb{N}=\{3,6,9,12 \ldots\}$. Prove that $\mathbb{N}-3 \mathbb{N}$ is a countably infinite set.

