HOMEWORK SET #1: DUE SEPTEMBER 16

(1) Munkres §13 Page 84, problems 1,3, 8a
(2) Let X be a topological space with the 'finite complement' topology, so that a set $U \subset X$ is open iff $X \backslash U$ is finite. Prove that a map $f : X \to X$ is continuous iff f is either constant, or finite-to-one. *finite-to-one means that the pre-image of every element has finite cardinality, that is* $\forall y \in Y, |f^{-1}(y)| < \infty$.