Berlin Mathematical School

Topology WS 2006–07

Homework assignment 7, due 13. Dec. 2006

(1) A *section* of a covering $p : Y \to X$ is a continuous map $s : X \to Y$ such that $p \circ s = \mathrm{id}_X$. Show that if a G–covering has a section, then it is trivial.

(2) Show that any double covering is a C_2–cover, where $C_2 \cong \mathbb{Z}/2\mathbb{Z}$ is the group of order two.

(3) Suppose a finite group G acts on a Hausdorff space Y with no fixed points. (That is, no nonidentity element $g \in G$ fixes any point $y \in Y$.) Show the action is even.