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Topology

WS 10/11

Exercise Sheet 8

To hand in (MA319 or MA318) by 15 December 2010

Exercise 1 (7 points):

A *section* of a covering $p : Y \rightarrow X$ is a continuous map $s : X \rightarrow Y$ such that $p \circ s = \text{id}_X$.

Show that if a G -covering has a section, then it is trivial.

Exercise 2 (6 points):

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.

Exercise 3 (7 points):

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.