Exercise Sheet 8
To hand in (MA319 or MA318) by 15 December 2010

Exercise 1 (7 points):
A section of a covering $p : Y \to X$ is a continuous map $s : X \to Y$ 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.