Math 9071 Homework 2

Due Friday, 5/5/17

1. Consider the translation surface in Figure 11.7 of the book. Use the translation surface to give S a conformal structure and a holomorphic quadratic differential.

2. Generalize the proof of Theorem 7.1 (see page 371) to prove Nielsen Realization for

(a) finite Abelian groups.

(b) finite solvable groups.

3. Let S be a surface with $\chi(S) < 0$. Characterize the mapping classes in $\mathrm{Mod}(S)$ that are periodic but not reducible, using the topology of the quotient orbifold.