

Homework 5

due February 13, 2002 in class

- (1) In class we have seen that $\text{Iso}(\mathbb{R}^2) = TO$ where T is the translation group and O is the orthogonal group. We have also shown that $T \trianglelefteq \text{Iso}(\mathbb{R}^2)$ and $T \cap O = \{1\}$. Is it true that $\text{Iso}(\mathbb{R}^2) \cong T \times O$? Justify your answer.
- (2) Let G be a discrete subgroup of $\text{Iso}(\mathbb{R}^2)$. Show that every subgroup of G is discrete.
- (3) Artin 5.4.1 (pg. 189)
- (4) Artin 5.4.2 (pg. 189)
- (5) Artin 5.4.7 (pg. 190)