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 $T \leq \text{Iso}(\mathbb{R}^2)$ 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)