1. For the case of real quadratic $K$ with fundamental unit $u > 1$, derive the area of the region $D_1$ described in class.

2. Let $K$ be a number field and let $F$ be a fundamental parallelootope for the lattice $\Lambda_U$ in logarithmic space. Prove that the region $D$ is homogeneous (i.e. $aD = D$) if we take $D' = \{ F + (1, \ldots, 2, \ldots) \mathbb{R} \}$, as described in class.