

Problem 2.2. (6 pt) Consider words of the form $w_1 w_2 \dots w_m$, where all w_i are words of length m over the alphabet $\{0, 1\}$. Let $Perm$ be the set of those words of this form in which the words w_i are pairwise different (i.e., these are permutations of all m -bit numbers). Prove that $Perm$ belongs to log-space uniform AC^0 .