The following questions are from Arora-Barak.

**Problem 1.** (50 points.) Describe a *decidable* language in $\mathsf{P/poly} \setminus \mathsf{P}$. **Hint:** Take a language $L \in \mathsf{EXP} \setminus \mathsf{P}$ (how do we know such a language exists?) and consider its unary variant.

**Problem 2.** (50 points.) Give an implicitly logspace computable function that maps any $n$-vertex graph in adjacency matrix representation to its adjacency list representation. Why do we care that such a function exists?

**Problem 3.** (50 points.) Show that $\mathsf{u-NC}^1 \subseteq L$. Conclude $\mathsf{u-NC}^1 \neq \mathsf{PSPACE}.$