Esercizio 1. Prove that every type $p(x) \subseteq L(\mathcal{U})$ that is strongly quasi-invariant over M extends to a global type that is quasi-invariant over M.

Esercizio 2. Let $p(x) \in S(\mathcal{U})$ be a global type invariant over A. Let $a, b \models p_{\restriction A}(x)$. Prove that there is a sequence $\bar{c} = \langle c_i : i < \omega \rangle$ such that $a, \bar{c}$ and $b, \bar{c}$ are both sequences of A-indiscernibles.

Esercizio 3. For every $\mathcal{D} \subseteq \mathcal{U}^{|z|}$ the following are equivalent

1. $\mathcal{D}$ is approximated by $\varphi(x; z)$;
2. $\mathcal{D}$ is externally definable by $\varphi(x; z)$.

Esercizio 4. Prove that the equivalence relation $a \overset{\text{L}}{\equiv}_A b$ is the transitive closure of the relation: there is a sequence $\langle c_i : i < \omega \rangle$ indiscernible over A such that $c_0 = a$ and $c_1 = b$.