EXERCISE 1. Let T be an arbitrary theory and $\mathcal{M} \models T$ be κ-saturated and strongly κ-homogeneous. Suppose that $p \in S(M)$ forks over A with $|A| \leq \kappa$ and . Then p has $\geq \kappa$ many $\mathrm{Aut}(M/A)$-conjugates.

EXERCISE 2. Let T be stable. Show there is an ordinal α such that if $U(p) \geq \alpha$, then $U(p) = \infty$. [Hint: use local character.]

Theorem 1 (Equivalents to superstability)**.** *Let T be stable. The following are equivalent:*

1. *T is superstable;*
2. *Every type has ordinal-valued U-rank;*
3. *For every finite tuple a and every B there is some finite $C \subseteq B$ such that $a \mathop{\smile\!\!\!\!\!\!|}_C B$.*

EXERCISE 3. Prove the implication $(3) \Rightarrow (1)$ in Theorem 1.

ZOMBIE EXERCISE 4. Consider a stable theory T. Let $p \in S_x(B)$ and let $A \subseteq B$. Show that the following are equivalent:

- p does not fork over A;
- there is a global type extending p which is $\mathrm{acl}^{eq}(A)$-invariant;
- there is a global type extending p which is $\mathrm{acl}^{eq}(A)$-definable.