# MATH 507 HOMEWORK 5

(1) Suppose that $T$ is $\omega$-stable and $M \preceq N \models T$. Show that if $X \subseteq N^k$ is definable in $N$ then $X \cap M$ is definable in $M$. (Hint use definability of types.)

(2) Suppose that $G$ is an $\omega$-stable group and $G \preceq G_1$. Suppose that $\psi$ is a formula without parameters defining $G^o$ in $G$. Show that $\psi(G_1) = G_1^o$

(3) Show that if $G$ is $\omega$-stable then $G$ acts transitively on the set of generic types in $S_1(G)$.

(4) (Extra Credit/Fun) Suupose that $T$ is $\omega$-stable. Show that if $p \in S(\mathfrak{C})$ and $p$ is definable over $A$ then $p$ does not fork over $A$.