

MATH 507 HOMEWORK 1

- (1) Show that if T is κ -categorical then for any $\lambda < \kappa$, T has no (κ, λ) -model.
- (2) Let $\mathfrak{R} = \langle \mathbb{R}, +, \cdot, < \rangle$ and let $T = Th(\mathfrak{R})$. Show that T has no Vaughtian pairs.
- (3) Show that if $M_0 \preceq M_1 \preceq \cdots \preceq M_i \preceq \dots$ is an elementary chain for $i \in \kappa^+$ so that each M_i is κ^+ -homogeneous then $\bigcup_{i \in \kappa} M_i$ is κ^+ -homogeneous.
- (4) Give an example of a complete non- ω -stable theory which has a (κ, λ) -model for all infinite cardinals $\kappa > \lambda$.