Übungen zur Vorlesung **Modelltheorie** (WS 2012/13) 15.2.2013
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Blatt 15

Aufgabe 1. If $A \subseteq M$ and $\mathfrak{M}$ is $|A|^+$-saturated, then $p \in \mathrm{S}(A)$ is algebraic if and only if $p(M)$ is finite.

Aufgabe 2. If $\mathfrak{M}$ is minimal and ω-saturated, then $\mathrm{Th}(\mathfrak{M})$ is strongly minimal.

Aufgabe 3. Show that the theory of an infinite set equipped with a bijection without finite cycles is strongly minimal and that the associated geometry is trivial.

Aufgabe 4. Show directly that strongly minimal theories eliminate $\exists^\infty$.

Aufgabe 5. A type is minimal if and only if its set of realisations in any model is minimal (i.e., has no infinite and coinfinite relatively definable subsets).

Aufgabe 6. Show that acl defines a pregeometry on $\mu(\mathfrak{M})$ if $\mu(\mathfrak{M})$ is minimal. In fact the following is true: if $b \in \mu(\mathfrak{M})$, $a \in \mathrm{acl}(Ab)$, $b \notin \mathrm{acl}(Aa)$, then $a \in \mathrm{acl}(A)$. Furthermore we have $\deg(a/A) = \deg(a/Ab)$.

[0] http://home.mathematik.uni-freiburg.de/caycedo/lehre/ws12_modell/