Esercizio 1. Let $A \subseteq N \models T_{\mathrm{rg}}$ and let $\varphi(x) \in L(A)$, where $|x| = 1$. Prove that if $\varphi(N)$ is finite then $\varphi(N) \subseteq A$.

Suggerimento. Una dimostrazione concisa si ottiene usando l'omogeità dei grafi aleatori.

Esercizio 2. Let L be the language of strict orders. Prove that $\mathbb{Q} \preceq \mathbb{R}$.

Esercizio 3. The language contains only two binary relations $<$ and e. The theory T_0 says that $<$ is a strict linear order and that e is an equivalence relation. Let $\mathcal{M}_{\text{ob}} = \text{Mod}(T_0)$ and let $\mathcal{M}_{\text{ar}}$ be the class of partial isomorphisms between models. Do rich models* exist? Can we axiomatize** their theory? Is it ω-categorical?

$*$ È sufficiente descriverli, non serve dimostrazione.

$**$ Scrivere solo l'assioma caratterizzante (in formula e a parole).