

Esercizio 1. The language L contains only the 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} consist of models of T_0 and partial isomorphisms.

1. Do rich models exist?
2. Describe T_1 be the set of sentences that hold in all rich models (if they exist).
3. Does T_1 have elimination of quantifiers?
4. Is T_1 λ -categorical for some λ ?

Esercizio 2. Let T_0 and \mathcal{M} be as in Example 7.15 except that we restrict the language to the relations r_0, \dots, r_n for a fixed n .

1. Do rich models of T_0 exist?
2. Describe T_1 be the set of sentences that hold in all rich models (if they exist).
3. Does T_1 has elimination of quantifiers?
4. Is T_1 λ -categorical for some λ ?

Answer the questions above if we add to the language a constant 0 to the language.

Answer the questions above when we drop the axioms $\neg\exists x [r_n(x) \wedge r_m(x)]$.

(Rispondere sinteticamente.)