Problem #99 (Solved !)

*Originator:* Konstantin Korovin and Andrei Voronkov [KV00]
*Date:* June 2000

*Summary:* Is the first-order theory of any Knuth-Bendix ordering decidable?

Is there an algorithm which, given a term signature $\Sigma$, a weight function $w$ and a precedence $\gg$, decides whether a first-order formula is valid in the term-algebra with the Knuth-Bendix ordering defined by $(w, \gg)$?

Positive partial results have been given for

- the existential fragment [KV00, KV01];
- signatures consisting only of constants and unary function symbols [KV02a].

*Remark*

This has been answered in the affirmative [ZSM05].

---

http://rtaloop.pps.jussieu.fr
Bibliography


June 15, 2012