



Bromberger/Möhle/Schwarz/Weidenbach

December 22, 2022

Tutorials for “Automated Reasoning WS22/23”
Exercise sheet 9

Exercise 9.1:

Consider the following clause set N via SCL.

- (1) $\neg P(x) \vee P(g(x))$
- (2) $P(a)$
- (3) $\neg P(g(g(g(a))))$

Consider for \prec_β a KBO where all symbols have weight one and $a \prec g \prec P$ and for the start $\beta = P(g(g(a)))$. Now perform an SCL regular run on N , leading to a stuck state, apply Grow appropriately and eventually refute N .

Exercise 9.2:

Refute the following clause set N via SCL and a regular run. Choose \prec_β and β appropriately.

- (1) $\neg P(x) \vee P(g(x))$
- (2) $\neg P(x) \vee R(x, g(x))$
- (3) $P(a) \vee P(b)$
- (4) $\neg R(b, g(b)) \vee \neg P(g(a))$

It is not encouraged to prepare joint solutions, because we do not support joint exams.