Tutorials for Decision Procedures
Exercise sheet 6

Exercise 1: Quantifier Elimination for $T_{\mathbb{Z}}$

Apply quantifier elimination to the following $\Sigma_{\mathbb{Z}}$-formulae:

(a) $\exists y.\ (x = 2y \wedge y < x)$

(b) $\forall y.\ (25 < x + 2y \vee x + 2y < 25)$

(c) $\forall y.\ (x + y < 8 \rightarrow x + 2y < 8)$

Exercise 2: Implementing Quantifier Elimination for $T_{\mathbb{Q}}$ 8 Points

Implement the quantifier elimination algorithm for $T_{\mathbb{Q}}$ from the lecture. SMTInterpol can be started with a special -script option giving a different solver file. This way you do not need to take care of parsing and most other technicalities. A template file, which also contains the NNF-conversion and some more hints, and starting instructions are given on the website. (It may take a little longer this time until these additional files are uploaded, the evening of Tuesday 4.6.2013 at the latest – you can submit this exercise later accordingly, too.)