



Christoph Weidenbach

April 16, 2019

**Tutorials for “Decision Procedures SS19”
Exercise sheet 1**

Exercise 1.1:

Apply Nelson-Oppen to the LRA, EUF combination and the formula

$$f(x_1, 0) \geq x_3 \wedge f(x_2, 0) \leq x_3 \wedge x_1 \approx x_2 \wedge x_3 - f(x_1, 0) \geq 1$$

where I assume appropriate sorts for the variables and function declarations.

Exercise 1.2:

Apply Nelson-Oppen to the LRA, EUF combination and the formula

$$x_2 \geq x_1 \wedge x_1 - x_3 \geq x_2 \wedge g(f(x_1) - f(x_2)) \not\approx g(x_3) \wedge x_3 \geq 0$$

where I assume appropriate sorts for the variables and function declarations.