Tutorials for “Decision Procedures SS19”
Exercise sheet 6

Exercise 6.1:
Provide an example of a clause set that shows non-compactness with respect to SUP(LIA). A single integer parameter $n$ in the constraint suffices.

Exercise 6.2:
Apply SUP(LRA) to the formula

$$f(c_1, 0) \geq c_3 \land f(c_2, 0) \leq c_3 \land c_1 \approx c_2 \land c_3 - f(c_1, 0) \geq 1$$

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

Exercise 6.3:
Apply SUP(LRA) to the formula

$$c_2 \geq c_1 \land c_1 - c_3 \geq c_2 \land g(f(c_1) - f(c_2)) \not\approx g(c_3) \land c_3 \geq 0$$

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