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Tutorials for “Automated Reasoning WS18/19”
Exercise sheet 9

Exercise 9.1 (3.89):

Prove satisfiability of the below clause set using

1. Superposition with Condensation-BS
2. SUPBS
3. NRCL
4. InstGen

$$N = \{R(a, b), \neg R(x, y) \vee \neg R(y, z) \vee R(x, z), R(a, y) \vee R(y, a), \neg R(b, b)\}$$

Exercise 9.2 (3.90):

Prove unsatisfiability of the below clause set using

1. Superposition with Condensation-BS
2. SUPBS
3. NRCL
4. InstGen

$$N = \{R(a, b), \neg R(x, y) \vee \neg R(y, z) \vee R(x, z), \neg R(x, y) \vee R(y, x), \neg R(b, b)\}$$

Exercise* 9.3 (3.91):

Prove that the Condensation-BS rule is an instance of the abstract superposition redundancy notion.

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