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Tutorials for “Automated Reasoning II”
Exercise sheet 4

Exercise 4.1: (*P*)

Eliminate x_2 in

$$\exists x_1, x_2, x_3. (3x_1 + 4x_2 - 1 > 0 \wedge -x_1 + x_2 + 1 \geq 0 \wedge 2x_2 - x_3 < 0)$$

by Cooper’s algorithm.

Exercise 4.2: (*P*)

Eliminate all variables in

$$\exists x_0, x_1. (2x_0 + 5x_1 < -16 \wedge 3x_0 + 7x_1 < -23 \wedge 2x_0 + 5x_1 > -18 \wedge 3x_0 + 7x_1 > -25)$$

by Cooper’s algorithm.

Exercise 4.3: (*P*)

Prove $a \mid dx + c$ iff $a \mid x + c \wedge d \mid x$.