universität innsbruck

Constraint Solving	SS 2024	LVA 703304
EXAM 1		June 25, 2024

LAST NAME:

FIRST NAME:

MATRICULATION NUMBER:

SCORE

1(a)	1(b)	2(a)	2(b)	2(c)

3(a)	3(b)	4	5

TOTAL **GRADE**

$\boxed{1}$ (a) *calculation + explanation*

(b) *calculation + explanation*

$\boxed{3}$ *convexity answer + brief explanation, calculation*

4 *description of encoding, example application*

5

Question	Yes	No
The decision procedure for difference logic is based on Dijkstra's shortest-path-algorithm.	☐	☐
In order to detect equalities for constraints $A\vec{x} \leq \vec{b}$, Bromberger and Weidenbach's method invokes the simplex algorithm on $A\vec{x} > \vec{b}$.	☐	☐
The small-model property of LIA is essential for termination of the branch-and-bound algorithm.	☐	☐
SAT is a decision problem in PSPACE.	☐	☐
$\forall x, y.\ x \neq y \wedge x \leq u \wedge v \leq y \longrightarrow a[x] = b[y] + 3$ can be reformulated into an equivalent array property.	☐	☐

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