

Übung zur Vorlesung Model Checking

1 Boolean Representations

- (a) Consider the addition of 3-bit numbers, i. e., $a+b = c$ with $a = a_1a_2a_3$ (respectively, b, c).
 - i) Give a propositional logic formula.
 - ii) Find an equivalent BDD representation.
- (b) Perform the same tasks for the expressions
 - i) Equality: $a = b$
 - ii) Multiplication: $a * b = c$

2 From LTL to Büchi

Transform the following LTL specifications into Büchi automata.

- (a) $\mathbf{FG}a$.
- (b) $\mathbf{GF}\neg a$.
- (c) $\mathbf{F}(a \wedge \neg(b\mathbf{U}c))$