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: \(a \times b = c\)

2 From LTL to Büchi

Transform the following LTL specifications into Büchi automata.

(a) \(FGa\).
(b) \(GF\neg a\).
(c) \(F(a \land \neg(bUc))\)