$$suchthatc_i(v) = \begin{cases} a_i(v), & \text{if } v \neq x \wedge i \leq n \\ 0, & \text{if } v \neq x \wedge i > n \\ b_i, & \text{if } v = x \wedge i \leq m \\ 0, & \text{if } v = x \wedge i > m \end{cases}$$ Given a deterministic automaton