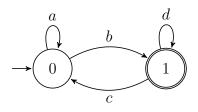# Langages Formels

Exercise n°2

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Hand this exercise over before the end of Wednesday 10th February

1. Apply the algorithm of McNaughton-Yamada on the following automaton. Detail each step.

2. Prove that the problem

   Input : Two finite automata $\mathcal{A}_1, \mathcal{A}_2$

   Question : $\mathcal{L}(\mathcal{A}_1) = \mathcal{L}(\mathcal{A}_2)$?

   is decidable.

We define by $|e|$ the size of a regular expression e, i.e. the number of symbols appearing in e.

3. Is there a unique minimal regular expression e such that $\mathcal{L}(e) = L$ for a given regular language L ?

4. Give a procedure which, given a finite automaton $\mathcal{A}$, returns a minimal regular expression e such that $\mathcal{L}(\mathcal{A}) = \mathcal{L}(e)$.

   (No need for more than a sentence)