Comet, exercises 7

Bring your answers to next course (Nov 8)

1 Algorithms

Consider the following non-deterministic automata

$$\begin{tikzcd} x \arrow[loop left, "{a,b}"] \arrow[r, "a"] & x_1 \arrow[r, "{a,b}"] & x_2 \arrow[r, "{a,b}"] & \overline{x_3} \end{tikzcd}$$

Question 1.1 *Compute the minimal deterministic automata accepting the same language of x: first determise the automata and then use the partition refinement algorithm seen at lesson.*

Question 1.2 *Use the algorithm `HKC` to check whether x and $x + x_3$ accept the same language.*

Consider the following non-deterministic automata

$$\begin{tikzcd} x \arrow[loop left, "{a,b}"] \arrow[r, "a"] & x_1 \arrow[r, "{a,b}"] & x_2 \arrow[r, "{a,b}"] & x_3 \arrow[r, "{a,b}"] & \overline{x_4} \end{tikzcd}$$

Question 1.3 *How many states has the minimal deterministic automata accepting the same language of x.*