1. Consider the following FA.

(a) Give two strings of length 4 accepted by the FA.

\[ aaab \quad babb \]

(b) Give two strings of length 4 NOT accepted by the FA.

\[ aaaa \quad baaa \]

(c) Describe in succinct-ish English the language of this FA. Be precise.

\[ \text{all strings of } a \& b \text{ ending in } b \text{ except } b \text{ and } a^*bb \]

2. Use the class algorithm to produce an NFA for the following RE: \( 0^+10^* \)

3. For each language, give 3 strings that are pairwise indistinguishable with respect to that language:

(a) The set of all binary strings that do not contain 101 as substring

\[ e.g. \ 101, \ 1010, \ 10100 \]

(b) The set of all binary strings that contain an even number of 0’s or an even number of 1’s or both.

\[ e.g. \ \epsilon, \ 0011, \ 00001111 \]