1. For the language represented by the regular expression \((a^*ba^*)^*\) answer the following questions: [3 points each]

(a) List up all the strings of length 2 belonging to the language.

\[ ab, ba, bb \]

(b) What is the second shortest string NOT belonging to the language?

\[ aa \]

(c) What is the second shortest string belonging to the language?

\[ b \]

(d) Describe in simple English the kind of strings of the language

\[ \text{strings that have at least one } b \]

2. Find a regular expression for the language accepted by the following NFA: [14 points]

\[ a(bba + ba) * (bb + ba) \]

\[ also \quad ab(bab + abab) * (b + a) \]