1. (a) Give an $\omega$-regular expression for the set of infinite words $\sigma$ over
\{A, B\} such that $A$ occurs finitely many times in $\sigma$ and between
any two consecutive $A$’s there are an odd number of $B$’s.

(b) Convert your $\omega$-regular expression for Part (a) into an equivalent NBA
using the method from class. (You can use the method in the book
instead if you prefer. The book’s method uses a different method to
convert an NFA $A$ into an NBA $B$ with $L_\omega(B) = (L(A))^\omega$ and also a
different method to convert an NFA $A$ and an NBA $B$ into an NBA
$C$ with $L_\omega(C) = L(A) \cdot L_\omega(B)$.)

(Use the method from class to convert the NBA you give into an $\omega$-regular
expression.)