1. Let $T = \text{lallilla}$.
   (a) Give the suffix tree of $T$ including suffix links.
   (b) Give the suffix array of $T$ together with the LCP array.

2. The reverse of a string $S[0..m]$ is the string $S^R = S[m−1]S[m−2]..S[0]$. Describe an algorithm for finding the longest factor $S$ of $T[0..n]$ such that the reverse $S^R$ is a factor of $T$ too. The algorithm should work in linear time on an integer alphabet of size $\sigma \leq n$.

3. Let $R = \{S_1, S_2, \ldots, S_k\}$ be a set of strings over a constant size alphabet such that no string in $R$ is a factor of another string in $R$. The shortest distinguishing factor of $S_i$ is the shortest string that occurs in $S_i$ but not in any other string in $R$. Describe an algorithm for finding the shortest distinguishing factor for all strings in $R$. The time complexity should be $O(||R||)$, where $||R||$ is the total length of the strings in $R$.

4. Prove Lemma 4.11. Hint: Generalize Lemma 1.25(b) (Lecture 3, slide 47) from three strings to many strings.

5. Let $L = \text{rttrra}$ be the Burrows–Wheeler transform of a text $T$.
   (a) What is $T$?
   (b) Simulate backward search on $T$ for the pattern $P = \text{ari}$.

6. Let $T = \text{senselessness}$.
   (a) Give the $C = C_1 \cup C_2$ suffixes of the DC3 algorithm for $T$.
   (b) Give the $C^*$ suffixes of the SAIS algorithm for $T$. 