

CS5114 Spring 2010 Homework Assignment 3
Due Thursday, February 11 at 11:00pm
50 points

1. Manber 5.11.

2. Manber 5.18

3. Let Σ be an alphabet of symbols, and let $X, Y, Z \in \Sigma^*$. Say that Z is a *shuffle* of X and Y if $|Z| = |X| + |Y|$ and if X and Y occur as disjoint substrings of Z . For example, if $X = \textit{close}$ and $Y = \textit{class}$, then *cloclases*, *classclose*, and *ccllaosse* are all shuffles of X and Y , but *clacloesss* and *classosecl* are not.

Describe an efficient algorithm to determine whether Z is a shuffle of X and Y . Let M be the length of X and N the length of Y . What is the time complexity of your algorithm as a function of M and N ?