# Disco Worksheet \#2 

September 7, 1998- Professor Broughton
Name:
Box \#:

## 1. The symmetric group

1. Write out all possible "shu- es" or permutations for $S_{3}$ the symmetric group on three symbols. Write down the list notation and the disjoint cycle notation for each one.
2. Based on number 4 determine the number of 4 -shu- es and 5 -shu- es, i.e., ..nd the cardinalities of $S_{4}$ and $S_{5}$
3. Look up the de. nition of adjacency in the text. Find the number of adjacencies in $S_{3} ; S_{4}$ and $S_{5}$.
4. W hat is the probability that a deck of 3,4 or 5 cards will have an adjacency.
