homework5.1 Crazy eights puzzle

Description

Given a sequence of cards c[0], c[1],…,c[n-1]$c[0],c[1],\ldots,c[n-1]$

e.g. 7H, 6H, 7D, 3D, 8C, 11S,

Please find the length of a longest subsequence $c[i_2],\ldots,c[i_k],(i_1<i_2<\ldots<i_k)$, where $c[i_j]$ and $c[i_{j+1}]$ have the same suit or rank or one has rank 8.

Input Format

The first line contains an integer $T(1\leq T\leq 10)$, which indicates the number of test cases.

Each test case contains two lines: The first line contains an integer $n(1\leq n\leq 10^3)$, the number of cards of the sequence.

The second line is the sequence of cards, separated by spaces. The rank of each card is represented by an integer number (between 1 and 13, inclusive), and the suit of each card is represented by an uppercase letter. ex: 1S,13H

Output Format

For each test case, print the length of a longest subsequence in one line...

Hint

Sample Input	Sample Output
2 6 7H 6H 7D 3D 8C 11S 10 1S 10H 4S 4C 12D 11C 5C 3H 10D 2S	5 5