

Problem E. STRING PERMUTATION

Time Limit 5 seconds

Problem Description

(String permutation) Write a recursive method to print all the permutations of a string. The user need to enter the string which consists of a set of characters.

Input

First line of the input contains T ($1 \leq T \leq 200$), the number of test cases. For each test case, there will a string of characters, L ($1 \leq L \leq 20$).

Output

For each test case, output a line in the format "Case # x :" where x is the case number (starting with 1), follow by the set of string permutation.

Sample Input output

Input	Output
3 abc zxyw p7*	Case # 1: abc acb bac bca cab cba Case # 2: zxyw zxwy zyxw zywx zwx y zwyx xzyw xzw y xyzw xywz xwzy xwyz yzxw yzwx yxzw yxwz ywzx ywxz wzxy wzyx

	wxzy wxyz wyzx wyxz Case # 3: p7* p*7 7p* 7*p *p7 *7p
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