A

Lexicographic Order
Input: Standard Input
Output: Standard Output

The alphabet of a certain alien language consists of **n** distinct symbols. The symbols are like the letters of English alphabet but their ordering is different. You want to know the original order of the symbols in that particular alphabet. You have a string consists of all the letters of that alphabet and you know that this is the **k**-th (1 based) lexicographic permutation of these symbols. You have to arrange these symbols in lexicographic order of that language.

Input
The first line of input will contain an integer **T (T ≤ 5000)** which denotes the number of test cases.

Each of the following **T** lines contains a string **s** and an integer **k**. The string will be of length **n (1 ≤ n ≤ 20)** and will consist of lowercase letters only. All the letters in the string will be distinct. The value of **k** will be in the range **(1 ≤ k ≤ n!)**.

Output
For each line of input output the case number and a string which contains the letters in lexicographic order in that language.

Sample Input

Sample Input	Output for Sample Input
3	Case 1: abcd
bdac 11	Case 2: acdb
abcd 5	Case 3: lrbjh
hjbrl 120	

Note
The first input resembles the original order of English alphabet. Here are the lexicographic permutations

abcd	1	cabd	13
abdc	2	cadb	14
acbd	3	cbad	15
acdb	4	cbda	16
adbc	5	cdab	17
adcb	6	cdba	18
bacd	7	dabc	19
badc	8	dacb	20
bcad	9	dbac	21
bcda	10	dbca	22
bdac	**11**	dcab	23
bdca	12	dcba	24