

Problem H: H.Uncle

Ms. OO is making a phone call to **Uncle H** and, to win his favor. To prevent people with bad intentions from giving her a bad reputation, she has decided to encode her messages using a specific scheme.

The encoding process is as follows:

1. First, the message is broken into **four separate, non-empty pieces**.
2. The text in each of these four pieces is **individually reversed**.
3. Then, the reversed pieces are **concatenated** back together in the same order.

Since a message can be split in many ways, it can have many possible encoded versions.

For example, with the message `ifyouwantanythingjusttellme`:

- One possible split is: `ifyouwant`, `anything`, `just`, `tellme`.
- Reversing each piece gives: `tnawuoyfi`, `gnihtyna`, `tsuj`, `emllet`.
- Concatenating them results in: `tnawuoyfignihtynatsujemllet`.

Your task is to find the one encoded message that would come first alphabetically (i.e., is lexicographically smallest).

Input:

The first line of input is an integer **T**, representing the number of test cases. Each test case consists of a single string, which may include lowercase English letters.

Output:

For each test case, print the single encoded message that comes first alphabetically.

Sample Input	Sample Output
3 kjbgdjfhg abcde ifyouwantanythingjusttellme	bjkdgfjgh abced atnawuoyfiettsujgnihtynleml

Constraints: $4 \leq T \leq 100$, $1 \leq \text{The length of message} \leq 75$