Problem 5 - Password

Description

As an intelligent programmer, Small2Kuo encodes his password p in two strings a and b such that $p = \text{LCS}(a, b)$. The term $\text{LCS}(a, b)$ means the longest common subsequence of a and b. If there are many possible longest common subsequences, his password will be the lexicographically smallest one. Recall that a subsequence is a sequence that can be derived from another sequence by deleting some elements without changing the order of the remaining elements.

Input Format

The first line contains an integer T indicating the number of test cases. Each test case contains two lines, specifying the strings a and b.

- $1 \leq T \leq 10$
- $1 \leq |a|, |b| \leq 2000$
- The strings only consist of lowercase English letters.

Output Format

For each test case, please output the password of Small2Kuo in one line.

Sample Input

```
3
significant
feather
xyxyx
yxyxy
thequickbrownfoxjumpsoverthelazydog
adafallhsinmuhsuchunpleasegivemeaplus
```

Sample Output

```
fat
xyxy
hicnpsveea
```