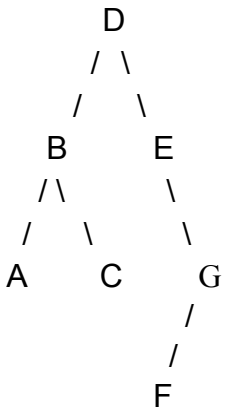
Tree Traversal

Input file: Problem1.txt

Consider binary trees whose nodes are labeled with single digits and letters (upper- and lowercase, case-sensitive). Given the preorder (root, left subtree, right subtree) node order and the in-order (left subtree, root, right subtree) node order for the same tree, it is possible to reconstruct the tree, assuming no two nodes in the tree have the same label. For example, given the preorder traversal order “DBACEGF” and the in-order traversal order “ABCDEFG,” you can compute that the tree these come from is



You are to write a program to find the tree’s post-order traversal (left subtree, right subtree, root) on any such tree.

Input

The first line of input is the number of test cases. Each case consists of two non-empty strings PRE and IN, representing the preorder traversal and in-order traversal of a non-empty binary tree, and consisting of letters and digits. Case is significant.

Output

For each test case, print the tree’s post-order traversal (left subtree, right subtree, root), using the format shown in the example.

Sample Input

```
2
7 D B A C E G F
7 A B C D E F G

4 B C A D
4 C B A D
```

Sample Output

```
Case #1: ACBFGED
Case #2: CDAB
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