

## Practice Problems

## A. Alien Numbers

[B. Always Turn Left](#)[C. Egg Drop](#)[D. Shopping Plan](#)[Questions asked](#)

## Submissions

## Alien Numbers

40pt Not attempted  
320/432 users correct (74%)80pt Not attempted  
271/338 users correct (80%)

## Always Turn Left

40pt Not attempted  
108/135 users correct (80%)80pt Not attempted  
96/114 users correct (84%)

## Egg Drop

40pt Not attempted  
56/82 users correct (68%)80pt Not attempted  
26/53 users correct (49%)

## Shopping Plan

40pt Not attempted  
43/67 users correct (64%)80pt Not attempted  
16/52 users correct (31%)

## Top Scores

sclo	480
jdmetz	480
lordmonsoon	480
ardiankp	480
krijgertje	480
ilyakor	400
Edu	400
Jonick	400
zibada	400
gpascale	400

## Problem A. Alien Numbers

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input  
40 points

Solve A-small

Large input  
80 points

Solve A-large

## Problem

The decimal numeral system is composed of ten digits, which we represent as "0123456789" (the digits in a system are written from lowest to highest). Imagine you have discovered an alien numeral system composed of some number of digits, which may or may not be the same as those used in decimal. For example, if the alien numeral system were represented as "oF8", then the numbers one through ten would be (F, 8, Fo, FF, F8, 8o, 8F, 88, Foo, FoF). We would like to be able to work with numbers in arbitrary alien systems. More generally, we want to be able to convert an arbitrary number that's written in one alien system into a second alien system.

## Input

The first line of input gives the number of cases, **N**. **N** test cases follow. Each case is a line formatted as

```
alien_number source_language target_language
```

Each language will be represented by a list of its digits, ordered from lowest to highest value. No digit will be repeated in any representation, all digits in the alien number will be present in the source language, and the first digit of the alien number will not be the lowest valued digit of the source language (in other words, the alien numbers have no leading zeroes). Each digit will either be a number 0-9, an uppercase or lowercase letter, or one of the following symbols !"#%&'()\*+,-./:;<=>?@[\\]^\_`{|}~

## Output

For each test case, output one line containing "Case #x: " followed by the alien number translated from the source language to the target language.

## Limits

 $1 \leq N \leq 100$ .

## Small dataset

 $1 \leq \text{num digits in alien\_number} \leq 4$ ,  
 $2 \leq \text{num digits in source\_language} \leq 16$ ,  
 $2 \leq \text{num digits in target\_language} \leq 16$ .

## Large dataset

 $1 \leq \text{alien\_number (in decimal)} \leq 1000000000$ ,  
 $2 \leq \text{num digits in source\_language} \leq 94$ ,  
 $2 \leq \text{num digits in target\_language} \leq 94$ .

## Sample

Input	Output
4	Case #1: Foo
9 0123456789 oF8	Case #2: 9
Foo oF8 0123456789	Case #3: 10011
13 0123456789abcdef 01	Case #4: JAM!
CODE 0!CDE? A?JM!.	

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