Objective

Your roommate, a future doctoral student in law, preferred to spend the last six months on vacation rather than in the library. When he returns, he claims to have made good progress on his thesis and you wonder how? He left his computer in the living room. He is supposed to return his work next week and asks you to review the 150 pages of the document. You are not very motivated but you still start reading. But you do not understand anything. Not because you are not competent, but simply because it is not French Your roommate must have picked up a computer with buggy keys.

It is absolutely necessary to make the work understandable. After identifying the correspondence of the letters, you will write a program that will allow the document to regain meaning.

For example, suppose the keys *a l s t u* have been bugged and correspond *to p r y d e.* Then the word *Ypred* analyzed in your program would become *Salut*.

Please note that capital letters should be respected when translating.

Data format

Input

Row 1: a integer **N** between *2* and *15* representing to the number of buggy keys.
Row 2: **N** lowercase letters separated by spaces corresponding to the buggy keys..
Row 3: **N** lowercase letters separated by spaces corresponding to the matching keys (the kth buggy key of row 2 corresponds to the kth key of row 3).
Row 4: **C** strings of characters comprising between *3* and *10* characters in lower case and capital letters corresponding to text to be corrected. **C** is between 1 and 100.

Output

The corrected test. That is, the string of characters obtained by replacing all the letters bugged in the text with the corresponding letters while respecting the lowercase/upercase letters.