





Introduction

Silvia is a modern teacher who frequently sends messages to all her students. She likes to remind them of their homework, to congratulate them on special events and to share interesting information.

Currently, she is sending the same message to all her students, but she would like to personalize the text for each student. She has asked her best student to build a software application that receives a template message and a list of names and returns a personalized message for each name. Would you like to help her?

Input

The input consists of several lines: The first line is the template message. The second line is the word to replace, which has a single occurrence in the template. The third line is the number of students to customize the messages for. The following lines contain the students' names, one name per line.

Output

The output of the program will contain all the personalized messages, one message per line. Each message will contain one student's name in place of the word that was to be replaced. The messages should appear in the same order as the names in the input.

Example 1

Input

Merry Christmas NNNN! NNNN 4 John Natalie Christian Angie

Example 2

Input

NAME, remember to do the homework for tomorrow. NAME 3 Mariel Max Rebecca

Output

Output

Merry Christmas John! Merry Christmas Natalie! Merry Christmas Christian! Merry Christmas Angie! Mariel, remember to do the homework for tomorrow. Max, remember to do the homework for tomorrow. Rebecca, remember to do the homework for tomorrow.