Low Toner

You have a printer with a toner cartridge that’s just about empty. When you print a document, some letters may not print very well, and it may be easy to mistake one letter for another. For example, when you print the letter R, you may get something that looks just like a P if the leg fails to print. However, a printed character that looks like an R must really be an R. Your toner shortage might fail to print some parts of letters, but it will never print extra parts that it shouldn’t. The following chart illustrates all of the possible misprintings of letters. Additionally, if any letter fails to print entirely, it will show up as a space.

To help you read these printouts, you want a program to figure out the possible words or phrases that could have produced a particular printed line. This task is aided by a dictionary. We will assume that any printed line is the result of printing a sequence of dictionary words with one space between consecutive words. Thus, a printout that looks like “FFFF” could be the result of printing “BEEF” or “BEEP”, but not “PBFE” since the first two are legal words but the third is not.

Input

Input will begin with a copy of the dictionary. This starts with a number, N and is followed by N lines, each containing a word from the dictionary. This is followed by a number of test case given one per line. Words in the dictionary will contain only capital letters and the test cases will each be a sequence of one or more spaces and capital letters. The dictionary will be given in lexicographic order. Test cases will end at the end of file.

Output

For each test case, print all possible sequences of space-separated dictionary words that could print out like the test case. Print your results one per line and in lexicographic order. Print a single blank line between the outputs for consecutive test case.

Sample Input

5
BEEF
BEEP
CONNECT
CONNECTICUT
CUT
FFFF
CC NECI CUT

Sample Output

BEEF
BEEP
CONNECT CUT
CONNECTICUT