Fractionated morse cipher

Fractionated morse is a classic cipher:

The plaintext letters are in [A-Z] only with no punctuation.
Each letter of the plaintext is first enciphered using Morse code with "|" after every letter.

If the length of the resulting string is not multiple of three, you have to truncate the remaining symbols.

Standard morse table:

A=.- B=-... C=-.-. D=-.. E=. F=..-. G=--. H=.... I=.. J=.--- K=-.- L=.-.. M=--
N=-. O=--- P=.--. Q=--.- R=.-. S=... T=- U=..- V=...- W=.-- X=-..- Y=-.-- Z=--..

This series of [A-Z] and | letters is taken off in units of three, each trigraph set and
cipher letters assigned to each group using a keyword alphabet to obtain the ciphertext.

Fractionated morse table with keyword alphabet (key=ROUNDTABLE):

R=... O=..- U=..| N=.-. D=.-- T=.-| A=.|. B=.|- L=.|| E=-.. C=-.- F=-.| G=--.
H=--- I=--| J=-|. K=-|- M=-|| P=|.. Q=|.- S=|.| V=|-. W=|-- X=|-| Y=||. Z=||-

Your task is simple. You only will have to code the input message using the keyword.
You have to reduce the keyword by the alphabet:
(JIMMORRISON => JIMORSN reduced key)
Score is the source length.

Input

N testcases (no more than 100)
Each line of the input contains the keyword and a plaintext.
The keylength max is 100 and the length of the plaintext is limited to 200.
The last testcase ends with EOF.

Output

Output consist of exactly N lines of cyphertexts with letters in [A-Z] with no spaces.

Example

Input:

JIMMORRISON RIDERSONTHESTORMINTOTHISHOUSEWEAREBORN

Output:

OQVNTNMGVXJNQAWKEHMELHKJQQNJWKSJURUSOUCAHOV