The Gold-Bug P35941_en

Consider a text made up of only lowercase letters, which is encrypted with one of the easiest methods: each letter has an associated character that is always written in its place. Given the translation table and the text encrypted with this table, recover the original text.

Input

Input consists of several cases separated by an empty line. Every case has three parts. The first one is a line with the translation table: 26 different characters (with no spaces nor '␣'), the first one corresponding to '`a`', the second one to '`b`', ..., and the last one to '`z`'. The second part is a number $n > 0$ in a line. The third part consists of n encrypted lines of text.

Output

For each case, write the original text, also with n lines. Change each '␣' of the encrypted text for a space. Write an empty line at the end of each case.

Observation

The first example is (basically) extracted from the story "The Gold-Bug" of Edgar Allan Poe. The second text is a famous quotation of Donald Knuth.

Sample input

```
52-!813467/09*+.[();?`]<:>
6
5_3++!_305))_6*_;48_26)4+.)_4+);80_6*_;48_!8`60)_)85;
;]8*;:_+*8_!83(88)_5*!_;46(;88*_96*?;8)
*+(;485);_5*!_2:_*+(;4
956*_2(5*-4_)8`8*;4_0692_85);_)6!8
)4++;_1(+9_;48_081;_8:8_+1_;48_!85;4)_485!
5_288_06*8_1(+9_;48_;(88_;4(+?34_;48_)4+;_161;:_188;_+?;

bcdefghijklmnopqrstuvwxyza
3
cfxbsf_pg_cvht_jo_uif_bcpwf_dpef
j_ibwf_pomz_qspwfe_ju_dpssfdu
opu_usjfe_ju
```

Sample output

```
a good glass in the bishops hostel in the devils seat
twenty one degrees and thirteen minutes
northeast and by north
main branch seventh limb east side
shoot from the left eye of the deaths head
a bee line from the tree through the shot fifty feet out

beware of bugs in the above code
i have only proved it correct
not tried it
```

Problem information

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