3872   Spell Checker

When you use a spell checker, and the lookup word is wrong, it usually makes suggestions. Our task is, given a list of correctly spelled words (dictionary words) and a possibly misspelled lookup word, which of the dictionary words is/are closest to the lookup word. By "closest" we mean that the lookup word has lowest penalty value relative to the dictionary word. Penalty values are calculated for the following errors:

Penalty	Spelling error	Example lookup word misspellings of the dictionary word HELLO
0	No error	HELLO
2	One extra letter	HELLOT, THELLO, HELLTO
4	Two extra letters	AHELLTO
2	One missing letter	HELO
4	Two missing letters	HLL
1	Adjacent letters interchanged	EHLLO, HLELO
2	One wrong letter	HULLO
4	Two wrong letters	HULUO

Only one error — the one with the lowest penalty — is counted for a lookup word/dictionary word pair.

Input

The input will consist of one or more data sets. Each data set will contain a line containing an integer n ($n < 1000$), followed by n lines each having a dictionary word (consisting of 1 to 100 uppercase letters). This is followed by a line containing an integer m ($1 \leq m \leq 100$), followed by m lines each having a lookup word (consisting of 1 to 100 uppercase letters).

The last data set has $n = 0$, and should not be processed.

Output

For each data set, there should be a line like:

`Data set < n >:`

where $< n >$ is a sequential data set number starting at 1. This is followed by m lines (one per lookup word) looking like:

$< lookup\_word >$: $< dict\_word\_1 >$, $< dict\_word\_2 >$, ..., $< dict\_word\_p >$.

The penalty of the lookup word is the lowest possible (and the same) for each of the following list of dictionary words. The list of dictionary words should be in alphabetical order. If there are no matches, the output should look like:

$< lookup\_word >$: `no suggestions.`

There should be an empty line between data sets.

Sample Input

```
4
CHILL
CHELLO
BELLOW
HELL
5
HELL
CHAMP
CHELL
THELLO
THELLI
2
HI
HO
1
HUM
0
```

Sample Output

```
Data set 1:
HELL: HELL.
CHAMP: no suggestions.
CHELL: CHELLO, CHILL, HELL.
THELLO: CHELLO.
THELLI: CHELLO, HELL.

Data set 2:
HUM: no suggestions.
```