Problem E - Word stretcher

Description

A new word game has been released which is rapidly becoming very popular. The game consists of a deck of cards and a bag of letters. Each card has a word written on it. The game starts with the first card of the deck being drawn and placed face up on the table to show the word on it.

Then, the first player draws a second card to get another word. To score, this player must write one word above the other using the letters from the bag, and then "stretch" the words by inserting dashes between the letters in order to make some of the letters match. Note that when a word is longer than the other, a certain number of dashes must always be used. The score is computed as the number of positions in which the letters in each word match minus the number of positions in which the letters do not match minus the number of dashes used to stretch the words. The maximum score may be negative.

The second player proceeds by drawing another card, writing both the new word and the word drawn by the previous player, and stretching them to maximise the score, and so forth, until the the last card on the deck is drawn. The player with the maximum accumulated score wins the game.

Input

Each test case gives the information about two words, and consists of two lines. The first line gives the length of the first word (*n*) and the *n*-character-long word itself. The second line provides the same information for the second word. The words contain neither spaces nor dashes ("-"), and may have different lengths.

Output

The output for each test case consists of three lines: the two stretched words in the first two lines (including the dashes) and the corresponding score value in the third line.

Note that there may be different ways of stretching the same pair of words to obtain the same score. Mooshak will compute the score based on the stretched words returned by your program. The output will only be accepted if the stretched words are valid given the input and the corresponding score is optimal and equal to the score in the third line of the output.

Example

Example input:

```
6 amanha
10 maquininha
```

Example output:

```
ama-----nha
-maquininha
-1
```

Another possible output:

```
ama---n--ha
-maquininha
-1
```