Keyword Transposition Cipher

A *keyword transposition cipher* is a method of choosing a monoalphabetic substitution to encode a message. The substitution alphabet is determined by choosing a keyword, arranging the remaining letters of the alphabet in columns below the letters of the keyword, and then reading back the columns in the alphabetical order of the letters of the keyword.

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For instance, if one chose the keyword *SECRET*, the columns generated would look like the following diagram. Note how the letters in the keyword are skipped when laying out the columns, and duplicate letters are removed from the keyword:

SECRT ABDFG HIJKL MNOPQ UVWXY Z

Since the alphabetical order of the characters in the keyword is *CERST*, the columns are then rearranged based on the first row. Then, the letters are read column-wise to get the substitution cipher as shown below:

CERST CDJOW DBFAG EBINV JIKHL => RFKPX ONPMQ SAHMUZ WVXUY TGLQY Z

After that, we match the order to the alphabet to get:

Original: ABCDE FGHIJ KLMNO PQRSTU VWXYZ Substitution: CDJOW EBINV RFKPX SAHMUZ TGLQY

Task

Given a piece of ciphertext and the keyword used to encipher it, write an algorithm to output the original message with the keyword transposition cipher described above.

Input Format

The first line of input will be an integer $N(1 \le N \le 10)$ indicating the number of test cases to follow. For each test case in N, two additional lines will follow, one containing the keyword, and one containing the ciphertext, respectively.

The keyword will be, at most, 7 characters long, and the ciphertext will be, at most, 255 characters in length (all uppercase).

Output Format

Output the decoded version of the ciphertext for each test case, one per line.

Sample Input

2 SPORT LDXTW KXDTL NBSFX BFOII LNBHG ODDWN BWK SECRET JHQSU XFXBQ

Sample Output

ILOVE SOLVI NGPRO GRAMM INGCH ALLEN GES CRYPT OLOGY