

DWITE '12 R2 #2 - Word Arithmetic

Time limit: 2.0s **Memory limit:** 64M

DWITE, November 2012, Problem 2

Tommy always gets really bored during his English class. However, Tommy loves Math! He spends most of his free time adding two numbers together (it's actually really exciting!). One day he came up with a brilliant idea to both cure his boredom in English class, and to not get caught by his teacher: add words together! The way Tommy adds two words together is exactly how he would add two numbers:

- Every letter represents a number: $A = 0, B = 1, \dots, Z = 25$
- Add the words one letter at a time from right to left.
- If the sum of two letters overflows (that is, greater than $Z = 25$), then the letter to write down will be the sum modulo (the remainder) 26, and the carry will be the quotient you get when you divide the sum by 26 (so essentially same as two numbers in base 26 instead of base 10).

For example, $Z + Z = BY$ (since $Z + Z = 50$, and 50 modulo 26 is 24, which is Y , and the carry is the quotient you get when you divide 50 by 26, i.e. 1, which represents B).

Note that you don't want the answer to have any leading A (as that's equivalent to having leading 0s).

The input will contain 5 test cases. Each case a line with two words, W_1 and W_2 , separated by a single space. Every word is at least 1 letter and no more than 254, made up of only uppercase letters.

The output will contain 5 lines of output. Each a single word representing $W_1 + W_2$, spelled in uppercase.

Sample Input

```
CAT DOG
MOM DAD
ABA A
```

Sample Output

```
FOZ
POP
BA
```

Problem Resource: [DWITE](#)