

Problem 1 – Spy Hard

You are a handler. Your task is to relay messages between field operatives (spies), and headquarters (the CIA). The CIA developed a system; first, the operatives send coded messages to you, then you partially decrypt each message and relay it to headquarters where further decryption takes place.

You will be given **a key and a message**. The key will be a number, it shows the **base of the numeral system** you'll need to use for decryption. The message is comprised of **various symbols which you convert to a number** by adding together either the **letter's position in the alphabet** ($a = 1, b = 2, \dots, z = 26$) if the symbol is a letter, **or the symbol's code in the ASCII table** otherwise. After you get the sum of the symbols, you need to convert it to the numeral system provided by the key.

To headquarters you need to send a single string containing three numbers concatenated together; the first part will be the numeral system you used, next comes the number of symbols in the initial message and finally comes the partially decrypted message (a number in the specified numeral system). See the example below to get a clearer idea of the steps you need to take.

Input

The input data should be read from the console.

- The first input line holds **a number (the key)**.
- The second input line holds **a string (the message)**.

The input data will always be valid and in the format described. There is no need to check it explicitly.

Output

The output data should be printed on the console.

- On the only output line you must print the **code** you'll transmit to headquarters.

Constraints

- The **key** will be a number between 2 and 10 inclusive.
- The **length of the message** will be between 1 and 100 symbols.
- Allowed working time for your program: 0.1 seconds. Allowed memory: 16 MB.

Examples

Input	Comments	Output
2 a%B	We'll use binary => first symbol in decyphered message is 2. 3 symbols in initial message, we concatenate with 2. $1(a) + 37(\%) + 2(B) = 40_{(10)} \Rightarrow 101000_{(2)}$; add at the end of the result and print.	23101000

Input	Output
7 [softuni]	79561

Input	Output
10 aaAoZz	10670

Input	Output
5 0%/,qT~	572324