

Send me the Code

Your task is to decode a message sent by a friend of yours to help you cheat on the exam. Be aware that the Big Vik is watching and he could corrupt your message.

The message arrives as a sequence of digits. You have the key to decode it.

The KEY is:

- You have to read the input from right to left.
- Decode digit on ****odd**** position: $\text{digit} * \text{index}^2$
- Decode digit on ****even**** position: $\text{digit}^2 * \text{index}$

indices	3	2	1
array	5	6	9
odd/even	odd	even	odd
result	$5 * 3^2$	$6^2 * 2$	$9 * 1^2$

- The new sequence of digit is generated
 - **result = $5 * 3^2 + 6^2 * 2 + 9 * 1^2 = 126$**
 - If the last digit is **0** your message is corrupted and Big Vik wins the game
 - Write on the console
 - **10**
 - **Big Vik wins again!**
 - If the last digit is not **0** the length of the message is this digit (**6 in the example**)
 - You have to find the remainder of **result % 26** (26 is the number of letters in the alphabet)
 - **s = $126 \% 26 = 22$**
 - Start of the message is at **s + 1**
 - **s + 1 = 23**
 - The 23st letter in the alphabet is **W**
 - The length of the message is **6** => **WXYZAB**
 - If the last letter ('Z') is reached you should continue from the beginning ('A')
 - Letters are always capital

Input

- The input data should be read from the console. The only input line contains an integer number N which is the encoded 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. The output consists of two lines. On the first output line, you must print the **result** after decoding the key. On the second line you should

print the message found or if the message is corrupted you should write **Big Vik wins again!**

Constraints

- The integer number **N** will have max 400 digits.

Sample Tests

Input

```
569
```

Output

```
126
WXYZAB
```

Input

```
101
```

Output

```
10
Big Vik wins again!
```

Input

```
814
```

Output
