Ambiguous Result

`result.c`, `result.C`, `result.java`, `result.p`

The ACM (Advanced Cosmos Monitor) recorded a set of messages transmitted by alien race of Space Invaders. Unfortunately, the antenna used for recording only handles lower frequencies representing numbers and two arithmetical operators in space-invaderian language, while all parentheses (corresponding to a high frequency) were lost.

Since numbers are important for those 8-bit creatures, we really need to know what number ranges these messages belong to — please, write a program that can do this for us!

Input Specification

Input contains several legal arithmetical expressions, each expression on a separate line. Each expression consists only of non-negative integers x_i ($0 \leq x_i \leq 100$) and binary operators "`+`" and "`*`". The expression starts with a number, then the operators and numbers alternate, and the last element is a number. Each expression contains P numbers ($1 \leq P \leq 100$) and $P-1$ operators. There are no parentheses, no other operators, no unary operator, etc.

The last input expression is followed by a line containing the single word "`END`".

Output Specification

For each input line (not counting the final END), output one line containing the minimum and maximum values (separated by a single space) that are achievable by adding parentheses to the input in a way that forms a legal expression and computing the result of that expression.

For example, the minimum value for $2+1*0$ input is achieved by $(2+1)*0$ and the maximum value is achieved by $2+(1*0)$. Therefore, you should print "`0 2`".

It is guaranteed that for *any* placement of parentheses, the value of *each* parenthesis will be less then 2^{63}. This means that also the maximal result will be between 0 and $2^{63}-1$, inclusive.

Sample Input

```
2+1*0
3+2*5+1*7+16
0
END
```

Output for Sample Input

```
0 2
36 690
0 0
```