# COCI '16 Contest 3 #4 Kvalitetni

**Time limit:** 1.0s **Memory limit:** 64M

A quality arithmetic expression consists of brackets, numbers and operations of multiplication and addition.

A quality arithmetic expression is defined recursively in the following way:

- An expression consisting of only one **positive real** number smaller than or equal to $Z_1$ is of good quality. For example, if $Z_1 = 5$, then $(4)$ is a quality expression.
- If $A_1, A_2, \ldots, A_k$ are quality expressions such that $2 \leq k \leq K$ and **the sum** of these expressions is at most $Z_k$, then the following expressions are of good quality:

$$(A_1 + A_2 + \cdots + A_k)$$

$$(A_1 \times A_2 \times \cdots \times A_k)$$

You are given a quality expression where the numbers are replaced by question marks. Determine the **maximal** possible value that the expression could have had.

## Input Specification

The first line of input contains integer $K$ $(2 \leq K \leq 50)$.

The second line of input contains integers $Z_1, \ldots, Z_K$, separated by spaces $(1 \leq Z_1, \ldots, Z_K \leq 50)$.

The third line of input contains one quality arithmetic expression in the described format.

An arithmetic expression consists of: `?`, `*`, `+`, `(`, `)`, and its length is at most $1\,000\,000$ characters.

## Output Specification

You must output the maximal possible value of the expression.

A solution is considered correct if the absolute or relative deviation from the official solution is less than $10^{-3}$.

## Sample Input 1

```
2
10 6
((?)+(?))
```

## Sample Output 1

```
6.00000
```

## Explanation for Sample Output 1

The expression `((3)+(3))` satisfies the conditions, so it is a quality expression, and it is easy to check that $6$ is the maximal value.

## Sample Input 2

```
3
2 5 3
(((?)+(?))*(?))
```

## Sample Output 2

```
6.00000
```

## Explanation for Sample Output 2

The maximum is achieved for, for instance, the expression `(((1)+(2))*(2))`.

## Sample Input 3

```
3
2 10 6
((?)*(?)*(?))
```

## Sample Output 3

```
8.000000000
```

## Explanation for Sample Output 3

The maximum is achieved for, for instance, the expression `((2)*(2)*(2))`.