

# 11291 Smeech

Professor Octastichs has invented a new programming language, Smeech. An expression in Smeech may be a positive or negative integer, or may be of the form  $(p e_1 e_2)$  where  $p$  is a real number between 0 and 1 (inclusive) and  $e_1$  and  $e_2$  are Smeech expressions.

The value represented by a Smeech expression is as follows:

- An integer represents itself
- With probability  $p$ ,  $(p e_1 e_2)$  represents  $x + y$  where  $x$  is the value of  $e_1$  and  $y$  is the value of  $e_2$ ; otherwise it represents  $x - y$ .

Given a Smeech expression, what is its expected value?



### Input

Input consists of several Smeech expressions, one per line, followed by a line containing '()'.

### Output

For each expression, output its expected value to two decimal places.

### Sample Input

```
7  
(.5 3 9)  
()
```

### Sample Output

```
7.00  
3.00
```