10014 Simple calculations

The Problem

There is a sequence of $n+2$ elements $a_0, a_1, \ldots, a_{n+1}$ ($n \leq 3000$; $-1000 \leq a_i \leq 1000$). It is known that

$$a_i = \frac{a_{i-1} + a_{i+1}}{2} - c_i$$

for each $i = 1, 2, \ldots, n$. You are given $a_0, a_{n+1}, c_1, \ldots, c_n$. Write a program which calculates a_1.

The Input

The first line of an input file contains an integer n. The next two lines consist of numbers a_0 and a_{n+1} each having two digits after decimal point, and the next n lines contain numbers c_i (also with two digits after decimal point), one number per line.

The Output

The output file should contain a_1 in the same format as a_0 and a_{n+1}.

Sample Input

```
1
50.50
25.50
10.15
```

Sample Output

```
27.85
```