Allowance (3) X30229_en

You have saved n euros. Additionally, every Monday of the forthcoming weeks you will be given a weekly allowance. On odd weeks, you get a_o euros, while on even weeks you will receive a_e euros. On the i-th week, your amount of expenses sums up to d_i euros. The first week is the week $i = 1$ and, therefore, it is an odd week.

Write a program that computes the balance at the end of each week.

Input

The input consists of three natural numbers, $a_o \geq 0$, $a_e \geq 0$ and $n \geq 0$. Representing the allowance on odd weeks, the allowance on even weeks and the initial savings, respectively.

Following, there is a non-empty sequence of natural numbers where each element $d_i \geq 0$. Each element d_i represents the expenses of the i-th week.

Output

The output is a sequence of integers. Each element of this sequence b_i indicates the balance at the end of the i-th week, once the corresponding expenses are payed.

Follow the format specified in the examples. Your code should follow the rules of style and contain the comments that you deem appropriate.

Sample input 1

```
10 5 100
70
10
10
25
25
25
25
25
```

Sample output 1

```
40
35
35
15
0
-20
-35
-55
```

Sample input 2

```
5 10 90
100
10
10
10
```

Sample output 2

```
-5
-5
-10
-10
```

Sample input 3

```
10 0 100
110
0
10
0
10
```

Sample output 3

```
0
0
0
0
0
```

Sample input 4

```
0 0 5
1
1
1
1
1
```

Sample output 4

```
4
3
2
1
0
```

Problem information

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