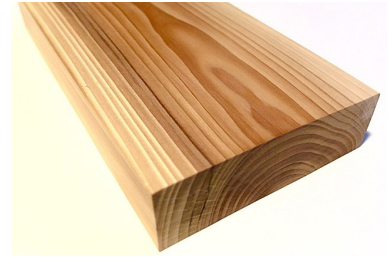


Meticulous smoothing

Problem ID: meticuloussmoothing

The arts and crafts teacher is looking at the beautiful plank you crafted in the woodshop, and gaze at you with a stern look. “This is not smooth enough! Use more sandpaper!”

Your plank is n cm long, and the arts and crafts teacher has measured the width of your plank on k different locations to prove his point. He demands that the thickness should differ by no more than 1 micrometer between any two consecutive measured location. If the sandpaper will shave off 1 micrometer of wood each time you use it at a particular location, how many times do you need to use the sandpaper?



CC-BY-SA 4.0, Tim van de Staak via Wikimedia Commons

Input

The first line of input contains a single integer $1 \leq n \leq 10^6$, the length of your plank. On the second line of input follows n space-separated integers $k_1, k_2, \dots, k_n$, the thickness of your plank ($1 \leq k_i \leq 10^6$ for every i).

Output

Output a single integer, the minimum number of times you need to use the sandpaper (assuming that the sandpaper only touch one location at the same time).

Sample Input 1

```
5
1 6 7 2 5
```

Sample Output 1

```
10
```