

# Ada and Alley

As you might already know, Ada the Ladybug is a farmer. She has a long alley of trees. She wants the alley to look good so she has decided to make the heights of all trees equal. She has two possible operations: she can either cut the top of a tree, decreasing its height by one (at cost of **1**) **or** cut the tree down (at cost of **height<sub>i</sub>**).

## Input

The first line of input will contain  $1 \leq N \leq 3 \cdot 10^5$ , the number of trees.

The next line will contain **N** integers  $0 \leq H_i \leq 10^9$

## Output

Print the minimal cost to make the height of all trees in alley equal.

### Example Input

```
5
1 2 3 4 5
```

### Example Output

```
6
```

### Example Input

```
3
1 4 2
```

### Example Output

```
3
```

### Example Input

```
4
1 6 1 1
```

### Example Output

```
3
```

### Example Input

```
6
7 11 13 1 3 5
```

### Example Output

18

## Example Input

7

1 11 4 13 5 10 7

## Example Output

21