

HCI '16 - Cheapest Operation Ever

Time limit: 0.6s **Memory limit:** 128M

Roy is helping the police department of his city in crime fighting. Today, they informed him about a new planned operation. The city has only one road and criminals live there! To catch these criminals, the police department has to recruit some police officers and give each of them $\$H$ as wages. A police officer can start his operation from any point A , drive his car to point B in a straight line, and catch all the criminals who live on this way.

The cost of the fuel used = $(A - B)^2$

Thus, find the minimum amount of money spent to catch all the criminals.

Constraints

Subtask 1 [20%]

$$1 \leq N \leq 10$$

$$0 \leq H \leq 1\,000$$

Subtask 2 [20%]

$$1 \leq N \leq 100$$

$$0 \leq H \leq 10\,000$$

Subtask 3 [60%]

$$1 \leq N \leq 100\,000$$

$$0 \leq H \leq 200\,000$$

Subtask 4 [0%]

Sample test cases.

Input Specification

1st line: Number of criminals (N) and value of H

2nd line: Position of where the criminals live

Output Specification

1st line: Minimum amount of money spent.

Sample Input

```
5 10
1 4 5 6 9
```

Sample Output

```
34
```

Explanation

One police deployed at position 1 = \$10

One police deployed at position 4, travel until position 6 = $\$10 + \$(2 \times 2) = \$14$

One police deployed at position 9 = \$10

Total = \$34

Original Problem Author: Bidhan; Problem Resource: [HackerRank](#)