

Social Distancing

Input File: `distin.txt`
Output File: `distout.txt`

Time and Memory Limits: 1 second, 1 GB

The hippopotami of North Yorkshire are hosting their annual Grand Banquet tonight!

The banquet is an ancient tradition, and is hosted by the hippo mayor on the main street of North Yorkshire. In a normal year, the mayor invites all N hippos to the event, and each of them is provided with a meal consisting of a mouth-watering main course followed by an enormous dessert. The head chef prepares the N meals, the i th of which is placed D_i metres along the street for a hippo to eat.

However, due to social distancing requirements, each hippo is required to stay at least K metres away from every other hippo at all times. This means that the i th and j th meal cannot both be eaten if they are strictly less than K metres away from each other. If they are exactly K or more metres away from each other, then they can both be eaten.

The mayor wishes to invite as many hippos as possible, while still obeying the social distancing requirements. As the head informatician for the hippos, the mayor has turned to you for help. What is the maximum number of hippos that can be invited?

Input

- The first line of input contains the two integers N and K .
- The next N lines each contain one integer. The i th of these is D_i , the location of the i th meal.

Output

Your program should output a single integer, the maximum number of hippos that can be invited.

Sample Input 1

```
3 1
3
2
3
```

Sample Input 2

```
3 2
1
3
7
```

Sample Input 3

```
5 4
3
5
1
12
10
```

Sample Output 1

```
2
```

Sample Output 2

```
3
```

Sample Output 3

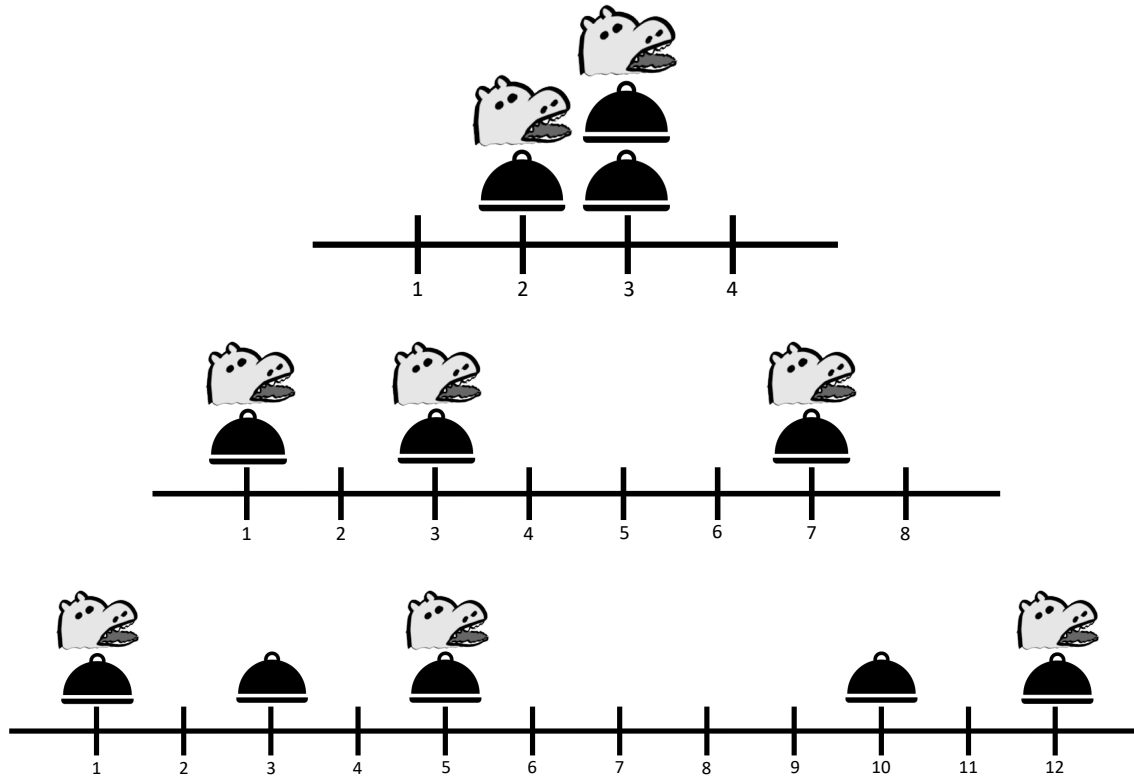
```
3
```

Explanation

Each of the samples are shown below with one possible solution. The dishes represent the meals, and hippos are shown above the meals which can be eaten.

In the first sample input there are 2 meals with $D_i = 3$, but only one hippo can be invited to eat them due to social distancing requirements. Another hippo can be invited to eat the meal at $D_i = 2$, because they are $K = 1$ metres away from the other hippo.

In the third sample input there is another solution which also achieves the maximum number of hippos that can be invited.



Subtasks & Constraints

For all test cases:

- $2 \leq N \leq 100\,000$.
- $1 \leq K \leq 1\,000\,000\,000$.
- $1 \leq D_i \leq 1\,000\,000\,000$ for all i .

Additionally:

- For Subtask 1 (15 points), $N = 2$.
- For Subtask 2 (25 points), $K = 1$.
- For Subtask 3 (45 points), $N \leq 1000$.
- For Subtask 4 (15 points), no special constraints apply.