Flatland is a country with a number of cities, some of which have space stations. Cities are numbered consecutively and each has a road of $1km$ length connecting it to the next city. It is not a circular route, so the first city doesn't connect with the last city. Determine the maximum distance from any city to it's nearest space station.

For example, there are $n = 3$ cities and $m = 1$ of them has a space station, city 1. They occur consecutively along a route. City 2 is $2 - 1 = 1$ unit away and city 3 is $3 - 1 = 2$ units away. City 1 is 0 units from its nearest space station as one is located there. The maximum distance is 2.

Function Description

Complete the *flatlandSpaceStations* function in the editor below. It should return an integer that represents the maximum distance any city is from a space station.

flatlandSpaceStations has the following parameter(s):

- *n*: the number of cities
- *c*: an integer array that contains the indices of cities with a space station, 1-based indexing

Input Format

The first line consists of two space-separated integers, n and m.
The second line contains m space-separated integers, the indices of each city having a space-station. These values are *unordered* and unique.

Constraints

- $1 \leq n \leq 10^5$
- $1 \leq m \leq n$
- There will be at least 1 city with a space station.
- No city has more than one space station.

Output Format

Print an integer denoting the maximum distance that an astronaut in a Flatland city would need to travel to reach the nearest space station.

Sample Input 0

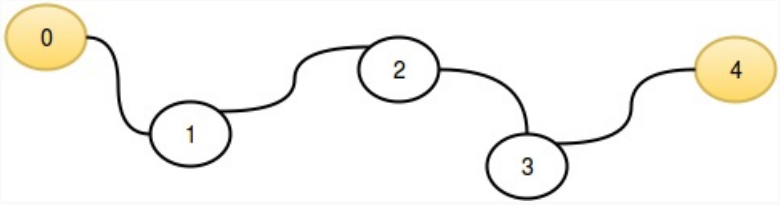
```
5 2
0 4
```

Sample Output 0

```
2
```

Explanation 0

This sample corresponds to following graphic:



The distance to the nearest space station for each city is listed below:

- $c[0]$ has distance 0 km, as it contains a space station.
- $c[1]$ has distance 1 km to the space station in $c[0]$.
- $c[2]$ has distance 2 km to the space stations in $c[0]$ and $c[4]$.
- $c[3]$ has distance 1 km to the space station in $c[4]$.
- $c[4]$ has distance 0 km, as it contains a space station.

We then take $max(0, 1, 2, 1, 0) = 2$.

Sample Input 1

```
6 6
0 1 2 4 3 5
```

Sample Output 1

```
0
```

Explanation 1

In this sample, $n = m$ so every city has space station and we print 0 as our answer.