ICPC PACNW 2016 C - Cameras

Time limit: 0.6s **Memory limit:** 256M

Your street has n houses, conveniently numbered from 1 to n. Out of these n houses, k of them have security installed. Mindful of gaps in coverage, the Neighborhood Watch would like to ensure that every set of r consecutive houses has at least two different houses with cameras. What is the minimum number of additional cameras necessary to achieve this?

Input

The first line of input contains three integers, n $(2 \leq n \leq 100\,000)$, k $(0 \leq k \leq n)$, and r $(2 \leq r \leq n)$.

The next k lines of input contain the distinct locations of the existing cameras.

Output

Print, on a single line, a single integer indicating the minimum number of cameras that need to be added.

Sample Input

```
15 5 4
2
5
7
10
13
```

Sample Output

```
3
```