Total Destruction

Time limit: 1.0s **Memory limit:** 64M

PeterWang needs help with virus extermination! There are Q viruses which are in capsules numbered from 1 to N, however not all capsules have a virus in them. **PeterWang** has an extermination ray that can exterminate capsules in the range $[l, r]$ (This includes ones that contain a virus and ones that do not). However, he can only use the ray **up to** M times.

Since capsules are quite expensive, can you tell **PeterWang** what is the minimum number of capsules that he has to destroy to exterminate the virus?

Input Specification

First line, 3 integers N, M, Q, denoting the number of capsules, maximum number of times **PeterWang** can use the ray, and the number of viruses, respectively.

Next Q lines, the capsule number v_i, denoting where the i^{th} virus resides in $(1 \leq v_i \leq N)$.

Output Specification

Output one integer, the minimum number of capsules that need to be destroyed in order to exterminate the virus.

Subtasks

For all subtasks:

$1 \leq Q \leq N \leq 10^6$

$1 \leq M \leq 10^3$

Subtask 1 [30%]

$1 \leq Q \leq N \leq 10^3$

$1 \leq M \leq 100$

Subtask 2 [70%]

No additional constraints.

Sample Input

```
10 2 5
3
4
5
7
10
```

Sample Output

```
6
```

Sample Explanation

PeterWang can use the ray on capsules $[3, 7]$ and then on capsule 10, which will result in $5 + 1 = 6$ total capsules destroyed, including the capsules that did not have the virus in them.