

It is Advent season. There are M street lights in a street N metres long (the meters of the street are denoted with numbers from 1 to N). Each of the lights lights up the meter of the street it's located in and K meters to the left and to the right of that location. In other words, if the light is located at meter X , it lights up all metres of the street from $X - K$ to $X + K$, inclusively. Of course, it is possible for a meter of the street to be lit up by multiple street lights. All lights have distinct locations.

The problem is that there is a possibility that the lights don't light up all N metres of the street. It is your task to determine the minimal amount of additional lights needed to be put up (at position from 1 to N) so that the entire street is lit up.

INPUT

The first line of input contains the number N ($1 \leq N \leq 1000$).

The second line of input contains the number M ($1 \leq M \leq N$).

The third line contains the number K ($0 \leq K \leq N$).

Each of the following M lines contains a number. The numbers are sorted in ascending order and represent the positions of each of the M street lights.

The positions will be distinct and from the interval $[1, N]$.

OUTPUT

You must output the required number from the task.

SAMPLE TESTS

input	input	input
5	2 6	1 3
2	3	2
2	3	10
1	3	1
5	1 9	2
	2 6	
output	output	output
0	2	1

Clarification of the first test case:

It's not necessary to add lights to the street, since all N meters are already lit up.

Clarification of the third test case:

It is necessary to add one lamp, for example at location 13.