

Wooden board

Ivancho and his friends decided to build a tree house and everyone had to help with the materials. While Ivancho was searching in his basement, he found a long wooden board, that he decided to cut down to smaller planks. However the board was very old and some parts of it had rotten, so Ivancho had to be careful to avoid them.

Now he wants to know how many K meter long planks he can cut from the board, so that they do not contain any rotten wood. Help him with this task by writing a program **board** that, that by a given board finds out how many planks can be cut from it.

Input:

The first row of the input file **board.in** will contain two integers - N and K , respectively the length of the board and the length of the planks we want to cut.

The next row will contain a single integer R - the number of rotten parts.

The next R rows will contain two integers each - B_i and L_i - respectively the distance from the beginning of the board to the i -th rotten part, and the length of said part.

The rotten parts will be given in sorted order by increase of B_i . Between every two consecutive rotten parts there will be some spacing.

Output:

The output file **board.out** should contain a single integer - the maximum number of planks that can be cut.

Limits:

$N \leq 15000$

$K \leq 15$

$R \leq 100$

Time limit: 0.3 sec.

Memory limit: 256 MiB.

Remark: Reading and writing to a file can be done using the appropriate statement. You can use the *freopen* statement from the standard library *cstdio* by adding the following two lines at the beginning of your main function:

```
freopen ("board.in", "r", stdin);
freopen ("board.out", "w" , stdout);
```

Number of preliminary tests: 4

Number of final tests: 10

Example test:

board.in	board.out
35 5 3 6 2 17 5 25 4	3