Covering the Corral

The cows are so modest they want Farmer John to install covers around the circular corral where they occasionally gather. The corral has circumference C (1 <= C <= 1,000,000,000), and FJ can choose from a set of M (1 <= M <= 100,000) covers that have fixed starting points and sizes. At least one set of covers can surround the entire corral.

Cover i can be installed at integer location x_i (distance from starting point around corral) (0 <= x_i < C) and has integer length l_i (1 <= l_i <= C).

FJ wants to minimize the number of segments he must install. What is the minimum number of segments required to cover the entire circumference of the corral?

Consider a corral of circumference 5, shown below as a pair of connected line segments where both '0's are the same point on the corral (as are both 1's, 2's, and 3's).

Three potential covering segments are available for installation:

```
          Start   Length
     i     x_i     l_i
     1      0       1
     2      1       2
     3      3       3

        0   1   2   3   4   0   1   2   3  ...
corral: +---+---+---+---+--:+---+---+---+- ...
        11111               1111
           22222222            22222222
                 333333333333
           |.................|
```

As shown, installing segments 2 and 3 cover an extent of (at least) five units around the circumference. FJ has no trouble with the overlap, so don't worry about that.

PROBLEM NAME: corral

INPUT FORMAT:

* Line 1: Two space-separated integers: C and M

* Lines 2..M+1: Line i+1 contains two space-separated integers: x_i and l_i

SAMPLE INPUT

```
5 3
0 1
1 2
3 3
```

OUTPUT FORMAT:

* Line 1: A single integer that is the minimum number of segments required to cover all segments of the circumference of the corral

SAMPLE OUTPUT

2