

Prof. Dr. Friedrich, Dr. Lenzner, Boockmeyer, Neumann, Stangl
Sommersemester 2017

Week 14 – (Adv.) Competitive Programming

Abgabe 31.07.2017 23:59 Uhr, über das Judge-Interface

brooms: (3 points - 1 second timelimit)

After each long school-year in Hogwarts there is a final event to celebrate the last day of school. Because of this final event, a lot of parents fly to Hogwarts.

Of course, they all arrive on their brooms. These brooms may have different lengths (some parents use specially customized race brooms, others short city brooms and some parents use a long tandem-broom together). Because some of these brooms are dangerous, they all have to be tied to a ring in the wall of the school building. Therefore, there is a ring for every broom. Moreover, all parents send the lengths of their brooms to Argus Filch. A broom has to be tied so that the ring in the wall is somewhere on the length of the broom (endpoints included). Brooms can touch each other, but they are not allowed to overlap. Because of this restriction, it is possible that not all brooms can be tied to the wall at the same time.

Because Argus Filch is not the most intelligent person on the grounds of Hogwarts, he asked you to compute the maximum number of brooms which can be tied at the same time to the rings.

Input The first input line contains $t \leq 10$, the number of testcases.

Each test case starts with the number of brooms n ($1 \leq n \leq 10^5$). The following n lines contain two integers l_i and p_i ($1 \leq l_i, p_i \leq 10^6, i \leq n$) each. l_i is the length of the i 'th broom. p_i is the position of the assigned ring (starting on the left side of the school building). There are no two rings at the same position. All positions are positive, but the left endpoint of a broom can be negative.

Output Please print for each test case the maximum number of brooms which can be tied at the same time to the wall.

Points There are two groups of test sets.

- (a) *easy*: For the first group of test sets, worth 1 point, you may assume that $n \leq 2000$.

- (b) *hard*: For the third group of test sets, worth 2 points there are no additional assumptions.

Sample input

1
7
5 9
2 17
6 10
3 11

2 16
4 13
5 6

Sample output

5