

Street Crossing

Input File: streetcrossing.txt

You want to get to Costco to eat free samples of hummus, but there is a busy road to cross.

The road has several lanes, with cars intersecting your straight-line path every now and then.

Each lane takes two seconds to traverse, and you cannot stop in the middle of the street.

Assume that each car passes instantaneously.

You would like to determine the shortest amount of time to wait before crossing the road to avoid getting hit by a car.

Input:

An integer, n , the number of data sets.

For each data set:

An integer, x , stating the number of lanes.

Lanes in order of crossing: For the next x lines:

Two space-separated integers, a and b . Cars in the lane will pass every a ($2 < a < 60$) seconds, the first car is b ($0 \leq b < a$) seconds away from you.

Output:

The minimum time in seconds needed to wait to cross the road, and -1 if it is never possible to cross the road.

Sample Input:

```
1
4
5 2
7 2
9 2
11 2
```

Sample Output:

```
3
```