1. Bridge Over the Cowhouse Creek

Program Name: Bridge.java Input File: bridge.dat

In a remote area of Fort Hood, there is a single lane bridge that spans Cowhouse Creek. Besides being single lane, there is a load limit of 42 tons for this bridge. Frequently, a convoy of military vehicles has to cross the bridge. The bridge gate keeper must divide the convoy into groups of one or more vehicles so that the load limit for the bridge is not exceeded and so the convoy can cross the bridge as quickly as possible. The number of minutes it will take a given group to cross the bridge is determined by the number of minutes of the slowest vehicle in the group. For example, if a group has three vehicles with times of 12, 30 and 4 minutes, it will take that group 30 minutes to cross the bridge.

You may assume the bridge is long enough to hold an entire group at one time and all of one group will completely cross the bridge before another group is allowed to start crossing the bridge. Each group of a convoy will start crossing the bridge immediately after the previous group has exited the other end of bridge. Groups will continue to cross the bridge until all groups in the convoy have completely crossed the bridge.

Input
The first line of input will contain a single integer `n` that indicates the number of convoys to cross the bridge. For each convoy, the first line will contain an integer `m`, $1 \leq m \leq 10$, denoting the number of vehicles in the convoy. The next `m` lines will each contain two integers separated by a space. The first integer `w`, $1 \leq w \leq 42$, is the weight of a vehicle in tons and the second integer `t`, $1 \leq t \leq 30$, is the time in minutes that it will take the vehicle to cross the bridge.

Output
For each convoy, you will print on a single line the minimum number of minutes that it will take for each convoy to cross the bridge.

Example Input File
```
2
8
10 10
5 25
40 5
35 15
12 23
30 20
42 25
8 30
10
42 10
23 30
40 5
2 10
1 20
4 30
6 28
28 3
17 8
35 10
```

Example Output to Screen
```
95
66
```