Problem TUNNELMAINT: Tunnel Maintenance

You are faced with the task of maintaining a long tunnel. Because you don't want to enter the tunnel yourself, you will use a robot to do the work. If the tunnel has length L, the robot is to enter the tunnel at one end (position 0) and leave the tunnel at the other end (position L), moving along the whole length of the tunnel in between to check for damages, do cleanup work, etc.

At each time, the robot is on a certain energy level (a nonnegative number). Its maximum possible energy level is M and moving/doing maintenance work along each unit length of tunnel causes its energy level to drop by exactly one unit of energy. If the robot's energy level ever drops to 0, it can't do any more work until its energy level is filled up again to a positive number.

Before entering the tunnel, the robot's energy level can easily be initialized to M outside the tunnel, at negligible cost. The length of the tunnel L might be greater than M, though, so the robot might get stuck inside the tunnel without further refilling. Fortunately, scattered along the tunnel, there are stations where the robot's energy level may be refilled automatically. Each such station has a fixed position between 0 and L inside the tunnel as well as a refilling cost per unit of energy. You may choose to fill up the robot's energy level to M at a station, partially fill it or completely ignore the station, but you can only refill by whole units of energy. You are interested in the optimum refilling strategy to minimize the total cost of maintaining the tunnel.

Input

The first line contains the number of test cases T ($T \leq 20$). The description of each test case starts with a line containing three integers L, M and N, denoting the length of the tunnel, the robot's maximum energy level and the number of stations along the tunnel, respectively ($1 \leq L \leq 10^9$, $1 \leq M \leq 10^9$, $1 \leq N \leq 10^5$). Following are N more lines, each one containing two integers p_i and c_i, where p_i is the position of station i and c_i is the refilling cost per unit of energy at station i ($0 < p_i < L$, $1 \leq c_i \leq 10^9$). The stations' positions are guaranteed to be pairwise distinct. Caution: There is a lot of input, don't use slow I/O methods!

Output

For each test case, print one line containing a single integer, the minimum total cost for the robot to maintain the whole tunnel or -1 if the tunnel can't be maintained by the robot because it would get stuck inside the tunnel for sure.

Sample Input 1

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2
10 6 1
5 3
10 3 2
6 1
3 2
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Sample Output 1

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12
-1
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