1506 Running relay

The school track-and-field team is taking a running relay race. There are n ($2 \leq n \leq 10^4$) members in the team. In order to let everybody participate in the race, each member should run at least d ($0 \leq d \leq 10$) meters. Besides that, everyone can run arbitrary distance. The whole length of the track is L ($1 \leq L \leq 10^5$) meters.

For the i-th member in the team, if he is in a good mood, then it takes him t_i seconds ($1 \leq t_i \leq 4 \times 10^4$) to run one meter. If he is in a bad mood, then it takes him s_i ($1 \leq s_i \leq 4 \times 10^4$, $1 \leq t_i \leq s_i$) seconds to run one meter.

As the coach of the team, you can assign the running distance of each member in advance. Suppose that, it takes S seconds for the team to complete the relay race if all the members are in bad moods and it takes T seconds for the team to complete the relay race if all the members are in good moods. You do want to have a good score. But you don't want to have a very bad score even if someone is in a bad mood. So you want to know the minimum value of T on condition that S should not be larger than W ($1 \leq W \leq 2147483647$).

Input

The input begins with a line containing an integer, indicating the number of test cases. There are no more than 100 test cases.

For each case, the first line begins with four integers — the above mentioned n, d, L and W. Then n lines follow, each representing a member. Each line contains two integers s and t, meaning that the member spends s seconds to run one meter when he/she is in a bad mood, and spends t seconds to run one meter when he/she is in a good mood.

Output

For each test case, if you cannot find a proper way to assign the running distance of each member, output a string "`No solution`" in a line. Otherwise, output the minimum value of T (rounded to 2 digits after the decimal point) in a line.

Hint:

In the first case, the first member runs 10.5 meters and the second member runs 9.5 meters.

$$S = 8 \times 10.5 + 6 \times 9.5 = 141 = W, \qquad T = 3 \times 10.5 + 6 \times 9.5 = 88.5$$

In the second case, every member should run at least 8 meters. But the length of the track is only 20 meters. Because $8 \times 3 > 20$, there is no solution.

Sample Input

```
2
2 1 20 141
8 3
6 6
3 8 20 200
8 3
6 6
7 1
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Sample Output

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88.50
No solution
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