

## 5836 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.

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

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
```

## Sample Output

88.50

No solution