Planet Cruise

locked

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There are n planets in a solar system (In this universe planets lie on a 2D coordinate plane). **You're on the first planet and you need to reach the planet with the highest x coordinate using your spaceship.**

Coordinates of the first planet is [0,0]. Coordinates of other planets are given to you. When you visit the i^{th} planet at t^{th} hour you have to pay $v_{i,t}$ for the planetory visa. You'll need spaceship fuel to travel between planets. Speed of the spaceship is 1 distance unit per hour. (to travel 5 distance units it will take 5 hours). Distance between two planets is the manhattan distance of their coordinates. You're only allowed to carry enough fuel to reach your next destination. In i^{th} planet you can buy fuel for the price f_i.

You're only allowed to move to planets which has **higher x coordinate than the current planet you're in**. You can choose any order of planets you want to visit (not breaking the increasing x rule) and you do not have to visit all planets, except the planet with the highest x coordinate.

Find the **minimum cost** required for the journey and output on a single line.

Note: It is guaranteed that one x coordinate will contain only one planet.

Subtasks

- In 50% of testcases $n <= 10, T <= 50$

Input Format

First line contains n, the number of planets

next n lines has x y, x axis and y axis position of the planet

next line contains n integers, f_1, f_2, f_3, ... f_n

next line contains integer T

Next n lines contains T integers each, $v_{i,t} (0 <= t <= T-1)$

Constraints

- All inputs are integers.
- $2 < n < 10^2$
- $2 < T < 5 * 10^2$
- $0 < v_{i,t} < 10^6$
- $0 < f_i < 10^6$
- $0 < x < 10^2$
- $0 < y < 4$

Output Format

Single integer containing the minimum cost. It is guaranteed that a solution exists.

Sample Input 0

```
3
0 0
2 0
1 0
10 30 20
3
0 0 0
100 100 10
100 100 100
```

Sample Output 0

```
30
```

Explanation 0

Planet with the highest x is the second planet. We can just go straight to it. Cost can be calculated as follows,

- distance is 2, which takes time 2
- need 2 fuel
- fuel price on the first planet is 10 so fuel cost is 20
- time will be 2 hours when we reach the planet
- Visa cost at 2 hours is 10
- total = fuel + visa = 30

Submissions: 2
Max Score: 100

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C++

```cpp
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code