## Problem C. Common Mistake

| Input file: | stdin |
| :--- | :--- |
| Output file: | stdout |
| Time limit: | 1 second |

In the era of dreadroughts and battleships, people love to stack as many guns as possible onto warships to increase their fire power.
However, this is a common mistake. Adding too many guns will decrease maneuverability and mobility, and ends up decreasing the overall battle efficiency of the ships.
Given an array of $N$ guns available, your are in charge of making the optimal selection so the battle efficiency of a ship is maximized.
You are given the following simplified model:
Each gun will have a weight $w_{i}$ and power $p_{i}$.


Yamato with her $9 x 46 \mathrm{~cm}$ guns

The ship has $K$ load ranges. While the total weight of all guns selected is in load range $\left[l_{i}, r_{i}\right]$, the battle efficiency of the ship is calculated as $m_{i} \sum_{j} p_{j}$ where $m_{i}$ is the modifier associated with that load range, and $j$ denotes the indices of all selected guns.
Note $m_{i}$ will not necessarily decrease as $l_{i}$ goes up, because having more guns will also bring crew members pride and increase their morale. This in turn will bring up the battle efficiency of the whole ship.

## Input

The first line of input contains one integer $N(1 \leq N \leq 200)$, the number of guns available.
In the next $N$ lines, each line will contain two nonnegative integers, $w_{i}, p_{i}\left(1 \leq w_{i}, p_{i} \leq 100\right)$.
The next line contains one integer $K(2 \leq K \leq 200)$, the number of load ranges.
In the next $K$ lines, each line contains two numbers $l_{i}, m_{i}$, the first integer is the starting weight $l_{i}\left(0 \leq l_{i} \leq 20000\right)$ of this load range. The second number is a real number, the power modifier $m_{i}\left(0 \leq m_{i} \leq 10\right)$.
It is guaranteed the load ranges will be given in the increasing order of $l_{i}$, so $l_{0}$ will always be 0 . All values of $l_{i}$ are distinct. It is implied that $r_{i}=l_{i+1}-1$ and $r_{K}$ does not matter (you can think of it as infinity).
It is also guaranteed the last load range will always have power modifier 0 , which can be considered as right past the maximum load capacity of this ship.

## Output

A single line with an number giving the maximum battle efficiency of the ship. The floating number is rounded up to 3 digits after decimal points.

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## Examples

|  | stdin |  |
| :--- | :--- | :--- |
| 3 |  | stdout |
| 10 | 30 | 200.000 |
| 20 | 40 |  |
| 20 | 40 |  |
| 4 |  |  |
| 0 | 1.0 |  |
| 20 | 2.5 |  |
| 50 | 1.8 |  |
| 60 | 0 | 0.000 |
| 2 |  |  |
| 100 | 100 |  |
| 200 | 200 |  |
| 2 | 2.5 |  |
| 0 | 0 |  |

