# Problem C. Optimal Truck

Time limit:    2 seconds

Peter is going to buy a truck and start a small transportation business. He studied the market and found out that there are $n$ potential customers in his city. There are $m_i$ contract options for the $i$-th client. Each option is specified by two numbers: $w_{ij}$ — the minimum capacity of the truck, which is required to fulfill the contract, and $c_{ij}$ — the profit that Peter will receive if he concludes this contract. No more than one contract can be concluded with each client.

Now Peter is thinking which truck is better to buy in order to get the profit he needs. He has $q$ options. In the $i$-th option, Peter wants his profit to be at least $x_i$. Help him, for each of the options, find the minimum capacity of the truck with which you can make such a profit.

## Input

The first line contains the integer $n$ $(1 \leq n \leq 10^5)$.

This is followed by $n$ blocks describing contract options for each of the potential customers. Each such block begins with the number $m_i$, followed by $m_i$ pairs of numbers $w_{ij}, c_{ij}$ $(1 \leq m_i, \sum m_i \leq 5 \cdot 10^5, 1 \leq w_{ij}, c_{ij} \leq 10^9)$.

Next comes the number $q$ $(1 \leq q \leq 10^5)$. This is followed by the $q$ numbers $x_i$ $(1 \leq x_i \leq 10^9)$.

## Output

Print $q$ numbers, the minimum carrying capacity of the truck, with which you can get the required profit, for each of the options. If it is impossible to get the required profit, print $-1$ for the corresponding option.

## Scoring

| Subtask | Score | Constraints | | | |
|---------|-------|-------------|---|---|---|
| | | $n$ | $\sum m_i$ | $q$ | Additional |
| 1 | 7 | $n \leq 5$ | $\sum m_i \leq 10$ | $q \leq 10$ | $w_i, c_i, x_i \leq 100$ |
| 2 | 15 | $n \leq 100$ | $\sum m_i \leq 500$ | $q \leq 10$ | $w_i, c_i, x_i \leq 100$ |
| 3 | 21 | $n \leq 10^5$ | $\sum m_i \leq 5 \cdot 10^5$ | $q \leq 10$ | — |
| 4 | 24 | $n \leq 10^5$ | $\sum m_i \leq 5 \cdot 10^5$ | $q \leq 10^5$ | $w_i \leq 100$ |
| 5 | 33 | $n \leq 10^5$ | $\sum m_i \leq 5 \cdot 10^5$ | $q \leq 10^5$ | — |

## Example

| standard input | standard output |
|---|---|
| 3<br>2<br>10 20<br>20 30<br>1<br>40 50<br>3<br>2 5<br>1 10<br>4 7<br>5<br>10 55 32 100 17 | 1 40 20 -1 10 |