Level 3 – Steps VIP elevator

For technical reasons, a VIP elevator can't move more than 100 floors.

Therefore if a request exceeds such a limit it must be divided into smaller requests.
The start timestamp of such a sub request is always the same as the previous one – important for the VIP scheduling.

The input contains now a minimum and a maximum level for each elevator as the first arguments of an elevator followed by a list of "travelTimestamps" in milliseconds, that will replace "acceleration", "maxSpeed" and "deceleration".
First "travelTimestamp" is the travel time for 1 level, second "travelTimestamp" is the travel time for 2 levels, … , 100 levels.

For the output you have to take only the end timestamp of the last sub request.

Restriction

- There are never two elevators servicing the same level (except of the transit stages)
- An elevator can always move exactly between 100 levels
  → 0-100, 100-200, 200-300, 300-400

Input & Output

Input

numberOfElevators
    minLevel maxLevel travelTimestamps…
numberOfRequests
    requestLevel requestGoal timestamp

Output

space separated request fulfillment timestamps in the **order of the input requests**.

Note

There are always 100 travelTimestamps.
In case of the given example input (so you can test it), the value for the last travelTimestamp (100 levels) is 48533

Example Input

4
0 100 1486 2101 2585 3059….
100 200 100 1486 2101 2585 3059….
200 300 100 1486 2101 2585 3059….
300 400 100 1486 2101 2585 3059….
3
0 400 10000
100 0 60000
400 300 70000

Example Output

215599 108533 167066