PROBLEM A. CATCHING CRICKETS

Time limit: 2 seconds

Nam is about to participate in the upcoming Cricket Fight Championship, a competition where participants use cricket, a small insect, to fight with each other.

To prepare for this competition, Nam has to catch a lot of strong crickets. He has investigated the nearby field and discovered n cricket nest, each with one cricket inside. Nam's house and n cricket nest positions can be modeled in a line where Nam's house is at coordinate $x = 0$ and the i-th cricket nest is at coordinate $x = x_i$ ($0 < x_1 < x_2 < \cdots < x_n$).

Catching crickets is not an easy job since they hide very well. As a cricket "expert", Nam knows that he needs t_i seconds to catch the i-th cricket. Besides, he needs 1 second to move 1 unit distance. Nam wants to catch as many crickets as possible as well as not spending too much time catching them (since his homework is waiting for him).

Your task is to help Nam answer Q independent queries. In the i-th query, determine the largest number of cricket that Nam can catch with the assumption he has at most a_i seconds to do so. Nam always starts at his house and after catching the last cricket he does not need to return home.

Input

The first input line contains a positive integer T, the number of test cases. T groups of lines followed, each describes a test case. Each test case consists of:

- One line with a positive integer n.
- Then i lines followed, the i-th line contains two positive integers x_i, t_i ($x_i \leq 10^9, t_i \leq 10^9$).
- Q will be given in the next line ($Q > 0$).
- The last line contains Q non-negative integers $a_1, a_2, \ldots, a_n$ ($a_i \leq 10^{15}$).

Both the sum of all n and the sum of all Q in all T test cases do not exceed 100000.

Output

Output T lines, each contains Q integers where the i-th one is the largest number of crickets Nam can catch in the i-th query.

Sample

INPUT	OUTPUT
1 3 1 100 2 1 3 1 2 4 106	1 3