

E. Valera and Queries

time limit per test: 2 seconds
memory limit per test: 512 megabytes
input: standard input
output: standard output

Valera loves segments. He has recently come up with one interesting problem.

The Ox axis of coordinates has n segments, the i -th segment starts in position l_i and ends in position r_i (we will mark it as $[l_i, r_i]$). Your task is to process m queries, each consists of number cnt_i and a set of cnt_i coordinates of points located on the Ox axis. The answer to the query is the number of segments, such that each of them contains at least one point from the query. Segment $[l, r]$ *contains* point q , if $l \leq q \leq r$.

Valera found the solution of this problem too difficult. So he asked you to help him. Help Valera.

Input

The first line contains two integers n, m ($1 \leq n, m \leq 3 \cdot 10^5$) — the number of segments on the axis of coordinates and the number of queries.

Next n lines contain the descriptions of the segments. The i -th line contains two positive integers l_i, r_i ($1 \leq l_i \leq r_i \leq 10^6$) — the borders of the i -th segment.

Next m lines contain the description of the queries, one per line. Each line starts from integer cnt_i ($1 \leq cnt_i \leq 3 \cdot 10^5$) — the number of points in the i -th query. Then the line contains cnt_i distinct positive integers $p_1, p_2, \dots, p_{cnt_i}$ ($1 \leq p_1 < p_2 < \dots < p_{cnt_i} \leq 10^6$) — the coordinates of points in the i -th query.

It is guaranteed that the total number of points in all queries doesn't exceed $3 \cdot 10^5$.

Output

Print m non-negative integers, where the i -th number is the response to the i -th query.

Examples

input
3 3 1 3 4 5 6 7 3 1 4 7 2 4 5 1 8
output
3 1 0