Problem K
Please Wait to Be Seated

Tresno is the maître d'hôtel of R.B., a renowned bistro in the ICPC Kingdom.

R.B. has N tables (numbered from 1 to N) in a line. Table 1 is closest to the entrance, while table N is the furthest. Table i can seat at most C_i people and becomes ready at time T_i after the bistro opens. Once a table becomes ready, it remains available until a group is seated there.

When the bistro opens at time 0, there are M groups (numbered from 1 to M) waiting at the entrance to be seated. Group j consists of P_j people. Because of accessibility needs and seating preferences, group j is willing to walk only as far as table R_j. In other words, group j is willing to sit at any table t if and only if $1 \le t \le R_j$.

At any time, Tresno may seat a waiting group at a ready, unused table, provided the table has enough seats and the group is willing to sit there. Each table can seat at most one group in total, and a group cannot be split between multiple tables.

Tresno wants to seat at least K people as soon as possible. Find the earliest time when the total number of seated people can reach at least K.

Input

The first line contains three space-separated integers N, M, and K ($1 \le N, M \le 100\,000$, $1 \le K \le 10^{14}$), denoting the number of tables, the number of groups, and the target number of people to seat.

Each of the next N lines contains two space-separated integers C_i and T_i ($1 \le C_i, T_i \le 10^9$), describing table i.

Each of the next M lines contains two space-separated integers P_j and R_j ($1 \le P_j \le 10^9$, $1 \le R_j \le N$), describing group j.

It is guaranteed that after all tables become ready, it is possible to seat at least K people.

Output

Output a single integer denoting the earliest time when at least K people can be seated.

Sample 1

Sample Input	Sample Output
3 3 6 2 1 4 5 6 3 4 3 2 2 4 2	3

Explanation of Sample 1: Tresno can do the following to seat at least 6 people by time 3.

- At time 1, table 1 (which can seat 2 people) becomes ready. Group 2 (which consists of 2 people) can be seated there, as they are willing to walk as far as table 2.
- At time 3, table 3 (which can seat 6 people) becomes ready. Group 1 (which consists of 4 people) can be seated there, as they are willing to walk as far as table 3. Note that group 3 cannot be seated at table 3, as they are only willing to walk as far as table 2.

It is impossible to seat 6 people before time 3, because the only table that becomes ready before then is table 1, which can only seat 2 people. Therefore, the answer is 3.

Sample 2

Sample Input	Sample Output
3 2 8 5 1 5 10 5 5 5 3 4 1	5

Explanation of Sample 2: Tresno can do the following to seat at least 8 people by time 5.

- At time 1, table 1 becomes ready. Seat group 2 there.
- At time 5, table 3 becomes ready. Seat group 1 there.

In total, $4 + 5 = 9$ people are seated.

Before time 5, only table 1 can be used, and it can seat at most 5 people. Therefore, it is impossible to seat at least 8 people earlier, so the answer is 5.

Sample 3

Sample Input	Sample Output
4 4 10 2 1 8 10 5 4 4 7 5 3 4 4 3 2 2 1	7