6464 Candy Factory

A new candy factory opens in pku-town. The factory import M machines to produce high quality candies. These machines are numbered from 1 to M.

There are N candies need to be produced. These candies are also numbered from 1 to N. For each candy i, it can be produced in any machine j. It also has a producing time (s_i, t_i), meaning that candy i must start producing at time s_i and will finish at t_i. Otherwise if the start time is $p_i(s_i < p_i < t_i)$ then candy will still finish at t_i but need additional $K \times (p_i - s_i)$ cost. The candy can't be produced if p_i is greater than or equal to t_i. Of course one machine can only produce at most one candy at a time and can't stop once start producing.

On the other hand, at time 0 all the machines are in their initial state and need to be "set up" or changed before starting producing. To set up Machine j from its initial state to the state which is suitable for producing candy i, the time required is C_{ij} and cost is D_{ij}. To change a machine from the state suitable for candy i_1 into the state suitable for candy i_2, time required is $E_{i_1 i_2}$ and cost is $F_{i_1 i_2}$.

As the manager of the factory you have to make a plan to produce all the N candies. While the sum of producing cost should be minimized.

Input

There are multiple test cases.

For each case, the first line contains three integers N $(1 \leq N \leq 100)$, M $(1 \leq M \leq 100)$, K $(1 \leq K \leq 100)$. The meaning is described above.

Then N lines follow, each line contains 2 integers s_i and t_i $(0 \leq s_i < t_i < 100000)$.

Then N lines follow, each line contains M integers, the j-th integer of the i-th line indicating C_{ij} $(1 \leq C_{ij} \leq 100000)$.

Then N lines follow, each line contains M integers, the j-th integer of the i-th line indicating D_{ij} $(1 \leq D_{ij} \leq 100000)$.

Then N lines follow, each line contains N integers, the i_2-th integer of the i_1-th line indicating $E_{i_1 i_2}$ $(1 \leq E_{i_1 i_2} \leq 100000)$.

Then N lines follow, each line contains N integers, the i_2-th integer of the i_1-th line indicating $F_{i_1 i_2}$ $(1 \leq F_{i_1 i_2} \leq 100000)$.

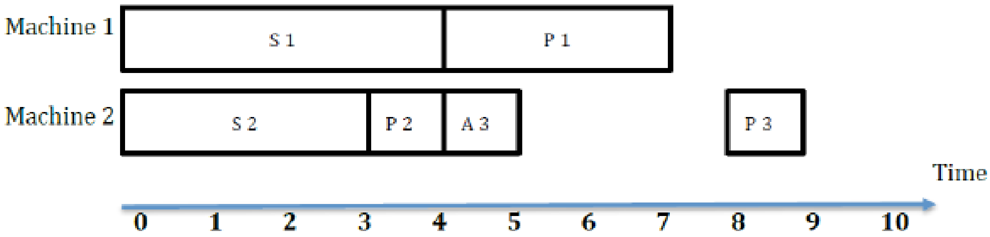
Since the same candy will only be produced once, E_{ii} and F_{ii} are meaningless and will always be '`-1`'.

The input ends by $N = 0$, $M = 0$, $K = 0$. Cases are separated with a blank line.

Output

For each test case, if all of M candies can be produced, output the sum of minimum producing cost in a single line. Otherwise output '`-1`'.

Hint: For the first example, the answer can be achieved in the following way:



In the picture, Si represents setting up time for candy i, Ai represents changing time for candy i and Pi represents producing time for candy i.

So the total cost includes:

- setting up machine 1 for candy 1, costs 2
- setting up machine 2 for candy 2, costs 3
- changing state from candy 2 to candy 3, costs 5
- late start of candy 2, costs 1

Sample Input

```
3 2 1
4 7
2 4
8 9
4 4
3 3
3 3
2 8
12 3
14 6
-1 1 1
1 -1 1
1 1 -1
-1 5 5
5 -1 5
5 5 -1

1 1 2
1 5
5
5
-1
-1

0 0 0
```

Sample Output

```
11
-1
```