**Problem 1:**

Ms. W has been abducted by A Sloth Monster. Now, as her boyfriend, it's the duty of Mr. S to save her.

To defeat The Slothy Monster, and save Ms. W from becoming a sloth creature, he has to reach at the certain level of fighting skill.

Currently, he is at the X'th level and he has to reach the Y'th level of fighting skill.

There are different transition methods available.

If you choose the i'th transition method it will take you from Ai level to the Bi level with the cost of Zi amount of stamina (**Reverse is also true**).

And if he is at skill level i, he can eat a certain Devil Fruit specific to that level which will make him sleep for Hi hours and after that make his stamina equal to Ci.

(**Note that the stamina level changed to Ci, not added to the current stamina level**).

Although, it's his choice to eat the Fruit or not. He can choose not to eat the fruit and continue with the current stamina level.

**Note that there can be different way to go from one skill level to another skill level with different or same cost of sleep.**

Now, Mr. S wants your help to find the minimum time he has to sleep to reach the ultimate skill level and save his girlfriend.

If there is no way to save her, print -1.

**Initial stamina level is 0.**

**Input Format:**

The first line contains N (Number of skill levels), M (Number of feasible transitions), A (Initial skill level), B (Ultimate skill level).

Next M lines contain 3 integer X, Y, Z each, showing from Xth from he can transform in Yth from and the require stamina Z.

Next N lines contains 2 integer each, Ci, Hi, that means, at ith form, he can change his stamina level to Ci with the cost of Hi amount of sleep.

**Output Format:**

Single Line Containing Minimum time he need to waste on sleep to transform from initial level to the ultimate level.

|  |  |
| --- | --- |
| **Sample Input** | **Sample Output** |
| 3 3 1 3  1 2 2  1 3 3  3 2 1  2 7  2 7  3 6 | 14 |

**Explanation:**

* First, he will eat the devil fruit at level 1 and sleep for 7 hours and get stamina of 2.
* Then will transforms to level 2, with cost of 2 stamina.
* Again, he will eat the devil fruit at level 2 and sleep for 7 hours and get stamina of 2.
* Then, will reach level 3 cost of 1 stamina.
* Total = 7 + 7 = 14 hours of sleep.

**Problem 2:**

Leonard has decided to quit living with Dr. Sheldon Cooper and has started to live with Penny. Yes, you read it right. (And you read it here for the first time!) He is fed up with Sheldon, after all. Since, Sheldon no more has Leonard to drive him all around the city for various things, he's feeling a lot uneasy so decides to set up a network of drivers all around the city to drive him to various places.

But, not every drivers wants to go every place in the city for various personal reasons, so Sheldon needs to trust many different cab drivers. (Which is a very serious issue for him, by the way!) The problem occurs mainly when Sheldon needs to go to- for example, the Comic Book Store- and there’s no cab driver who goes directly to that place. So, he has to take a cab till another place, and then take a cab from there – making him more scared!

**Sheldon wants to limit his trust issue.** Really. Once. And. For. All

Let’s say that you’re given the schedules of all the cabs from the major points where he travels to and from – can you help Sheldon figure out the least number of cab drivers he needs to trust, in order to go to all the places he wants to?

**Input Format:**

- Two integers a, b. a - number of places he needs to go. b - number of cab drivers.

**Output Format:**

Print the minimum number of cab drivers he needs to have faith to travel between places in the city.

|  |  |
| --- | --- |
| **Sample Input:** | **Sample Output:** |
| 3 3  1 2  2 3  1 3 | 2 |