

A

Monster Synthesis

In game "Monster battle", you know that level 3 monster A can beat all your friends, so you want to have one. But the monster (monster A) you want costs \$10,000 in the monster shop. You don't have that much of money, so you need to find another way to get this high level monster. After some researches, you know:

Level 3 Monster A costs \$10,000
Level 2 Monster B costs \$1,000
Level 2 Monster C costs \$3,000
Level 2 Monster D costs \$50

In this game, there is a monster synthesis shop. You can get a specific monster if you provide another monster at specific level and some money. Here is the list of rules:

A Level 2 Monster B + \$8000 can be transformed to a Level 3 Monster A
A Level 2 Monster C + \$5000 can be transformed to a Level 3 Monster A
A Level 2 Monster D + \$200 can be transformed to a Level 2 Monster B
A Level 2 Monster D + \$200 can be transformed to a 2 Monster C

Although it maybe an easy way to get the wanted monsters, there is a rule during "multiple monster synthesis" stated in the game:

The difference between the level of the highest level monster and the lowest level monster in the synthesis chain cannot be greater than M.
E.g. if $M = 1$,
the chain: level 1 monster A \rightarrow level 2 monster B \rightarrow level 3 monster C
Highest Lv = 3, Lowest Lv = 1, difference = $3 - 1 = 2 > M$
so this chain is invalid, and the "target monster" will die after this chain of synthesis.

Now you want to know the minimum cost to get the monster you want.

For convenience, we number the monster starting from 1. Monster 1 is the monster you want. Every monster will have a cost P in the monster shop, and the level L. And the level of every monster is fixed.

Input

The first line contains two integers M and N, the maximum difference in level during sythesis chain and number of monsters. Then there are N groups of monster descriptions starting from monster 1. Every monster descriptions is started by three non-negative integers P, L, X($X < N$), stating the cost, level of monster i, and the number of sythesis rules. Then there are X lines containing two integers T and V, meaning "monster T can transform to monster i, costing V". Input is terminated with EOF.

Contraints:

$$1 \leq M \leq 5$$

$$1 \leq N \leq 100$$

$$1 \leq P, V < 10000$$

Output

For each case, output the minimum cost to get the monster 1.

Sample Input

Output for Sample Input

1 4 10000 3 2 2 8000 3 5000 1000 2 1 4 200 3000 2 1 4 200 50 2 0 1 5 10000 3 2 2 5000 3 5000 3000 2 1 4 500 3000 4 1 4 400 1000 3 1 5 100 100 2 0	5250 5700
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Explanation

1. Buy Monster 4 (\$50) -> transform to Monster 3(\$200) -> transform to Monster 1(\$5000)

2. Buy Monster 5 (\$100) -> transform to Monster 4(\$100) -> transform to Monster 2(\$500) -> transform to Monster 1(\$5000)

We **cannot** use “Buy Monster 5 (\$100) -> transform to Monster 4(\$100) -> transform to Monster 3(\$400) -> transform to Monster 1(\$5000) “

Because:

The highest Level = Monster 3, Lv4

The highest Level = Monster 5, Lv2, Level difference > M