Given a positive integer $\Delta$ ($0 < \Delta < 10000$), which is called the *overhead*, and $M$ ($0 < M \leq 200$) straight line segments in a two-dimensional plane with the following properties:

1. each line segment has a height, which is a positive integer;
2. two line segments only intersect with each other on endpoints;
3. no two line segments are overlapped.

Each line has a unique number between 1 and $M$. Each endpoint in the plane has a unique number between 1 and $N$ ($0 < N \leq 400$), where $N$ is the total number of endpoints. A line segment is represented by its two endpoints $(n_i, n_j)$. Let *height(L)* be the height of a line segment $L$.

A *path* is a sequence of line segments $L_{C_1}, L_{C2}, \ldots, L_{C_k}$, such that $k > 1$, $C_i \neq C_j \quad \forall i \neq j$, $L_{C_i}$ intersects with $L_{C_{i+1}}$ for all $1 \leq i < k$, one endpoint of $L_{C_1}$ does not intersect with any other line segments, and one endpoint of $L_{C_k}$ does not intersect with any other line segments. The cost between two intersection line segments i $L_{C_i}$ and $L_{C_{i+1}}$ is

$$\left|height(L_{C_i}) - height(L_{C_{i+1}})\right|$$

That is, for example you can image, the number of stairs that one has to climb (up or down ) by walking from $L_{C_i}$ to $L_{C_{i+1}}$. The cost of a path $L_{C_1}, L_{C2}, \ldots, L_{C_k}$ is

$$k \cdot \Delta + \sum_{i=1}^{k-1} cost(L_{C_i}, L_{C_{i+1}}).$$

In the example shown in Fig. 1, $\Delta = 25$, $M = 8$, and $N = 9$. Then $cost(L_2, L_3) = 1$ and $cost(L_1, L_6) = 8$. $L_1, L_4, L_5$ is not a path. There are three paths in the plane. The cost for the path $L_1, L_6, L_7, L_8$ is 109. The cost for the path $L_1, L_4, L_5, L_8$ is 131. The cost for the path $L_2, L_3$ is 51. Hence $L_2, L_3$ is the path with the least cost.

You may also assume there is at least one path in the plane. Write a program to find the least cost among all paths.

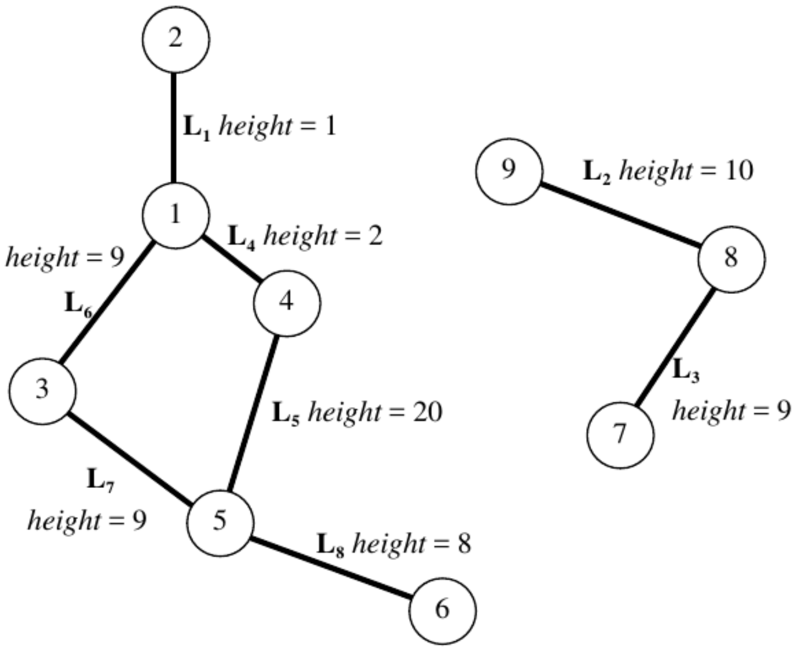


Fig. 1: An example of 8 straight lines with 9 endpoints.

## Input

The first line is $l$, the number of test cases. The first three lines of test case $\#i$ are $M_i$, $N_i$ and $\Delta_i$ which are the numbers of line segments and endpoints, and the overhead, respectively. The following $M_i$ lines each contains the two endpoints of each line segment, starting from $L_1$ to $L_{M_i}$, and its height.

Each line segment is represented by three integers, separated by blanks.

## Output

Contains $l$ lines. The $i$-th line contains the least cost of all paths in the $i$-th test case.

## Sample Input

```
2
8
9
25
1 2 1
8 9 10
7 8 9
1 4 2
4 5 20
1 3 9
3 5 9
5 6 8
6
6
21
1 2 1
1 4 2
4 5 20
1 3 9
3 5 9
5 6 8
```

## Sample Output

```
51
93
```