

D. Missing Ladders

Multi-level scaffolding has been placed outside a building, but the foreman forgot to place the ladders to connect any of the platforms the workers stand on!

Suppose the foreman can bring ladders of perfect size to connect any overlapping horizontal platforms in the scaffolding. What is the smallest total length of ladders he needs to bring in order to create paths for his workers to reach any platform from any other platform and also the ground?

The scaffolding consists of N horizontal platforms at different heights y_i spanning different closed intervals $[x_{Li}, x_{Ri}]$. Two platforms i and j can be connected by a vertical ladder if the closed intervals $[x_{Li}, x_{Ri}]$ and $[x_{Lj}, x_{Rj}]$ intersect.

Input

The first line contains the number T ($1 \leq T \leq 20$) giving the number of test cases. The first line of each test case contains n ($1 \leq n \leq 1000$), the number of horizontal platforms in the scaffolding. The following n lines will each contain three integers x_L , x_R , and y such that $0 \leq x_L < x_R \leq 1,000,000$ and $y > 0$ describing each horizontal platform in the scaffolding. No two platforms will overlap.

Output

For each test case, output a line with a single number, the smallest total length of ladders to create path between each of the platforms and ground.

Sample Input/Output

Input	Output
7	6
2	3
1 2 2	4
3 5 4	3
2	13
2 4 3	9
1 3 1	9
3	
1 4 2	
3 6 3	
5 8 2	
3	
0 6 1	
1 5 2	
2 4 3	
5	
5 8 8	
2 6 6	
0 3 3	
7 11 5	
10 14 7	
8	
1 3 1	
2 4 2	
3 5 3	
4 6 4	
5 7 5	
6 8 6	
7 9 7	
8 11 4	
7	
1 4 3	
2 5 4	
3 7 5	
6 9 4	
8 11 5	
10 13 4	
11 14 3	